Vermont School District Consolidation Case Study

A doctoral thesis presented

by

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Abstract

Facing a declining K-12 student population and rising education costs, Vermont lawmakers approved Act 46 in 2015. This legislation has the potential to consolidate school districts that have fewer than 900 students. The law aims to significantly reduce the number of districts in the state by using tax incentives as a carrot and forced consolidation as a stick. Advocates of the legislation claim economies of size and scale will save Vermont taxpayers money and provide more educational equity for students. Opponents say the initiative is an affront to Vermonters' local control, centralization of power, and a means to close small schools. The purpose of this case study is to understand how preconsolidation and postconsolidation expenditures and student performance results compare to stakeholder perceptions. The research site for this school consolidation case study will be the Waterbury-Duxbury School District, located in Waterbury and Duxbury, Vermont. Results of the study may be beneficial to Vermont communities that are examining and considering school district consolidation.

Keywords: Vermont, school district consolidation, Act 46

Table of Contents

List of Tables

List of Figures

Chapter 1: Introduction

Statement of the Problem

The increasing cost of education, a significant decline in Vermont's K-12 student population, and growing property tax rates have many Vermonters wondering whether small school districts are sustainable. Heated discourse is taking place across Vermont regarding the cost-effectiveness of small school districts as well as the educational opportunities they afford students.

It was clear from the debate that occurred during the 2014 Vermont legislative session that the state is at a crossroads regarding how it governs its public school systems. Intense debates took place in 2014 among community members, professional organizations, and legislators over the fate of Vermont's school governance structure. The House Education Committee studied and discussed school district consolidation for over four months and presented bill H.883 to the full House of Representatives in April 2014. In a close 70-60 vote, the House approved the bill. Bill H.883 would have reduced the number of school districts from approximately 280 to no less than 45 and no more than 55 by 2020. The bill stalled, however, in the Senate Education Committee; thus there were no modifications that year to the statutes that shape school districts in Vermont.

The legislature's inaction left many Vermont leaders concerned and frustrated. In an interview about Vermont's school district governance framework, former Governor Peter Shumlin stated, "If you were going to design a system from scratch, you would not design what Vermont has right now" (Bidgood, 2014, p. 1). Former Speaker of the House Shap Smith also shared, "The last time we looked at school districts in the state of Vermont was in 1892. It's good to look at governance every century and a half" (Galloway, 2014, p. 6). These statements

from important lawmakers demonstrate the weight of the issue and the desire of key policymakers to make substantial adjustments to Vermont's school governance model.

The 2014 legislative session primed the school district consolidation conversation across Vermont. Moreover, the continued increase in property taxes and stagnant state revenues fueled interest in adjustments to Vermont's public school district governance framework. These variables forced legislators to tag school district consolidation as a priority issue to examine and debate in 2015.

From the onset of the 2015 legislative session, school district consolidation was a divisive subject. Passionate testimony was heard on both sides of the issue at House and Senate Education Committee meetings. Impassioned editorials were submitted to local papers decrying the state's attempt to usurp local control and fundamental democratic principles. Opponents also asked to see case evidence demonstrating that school district consolidation reduces expenditures and provides more diverse opportunities for students.

At the very end of the 2015 legislative session, pressure from constituents to reduce or slow property tax increases and overall pre-K-12 education costs provided the push necessary for the House and Senate to hammer out a compromise bill. Act 46 (2015) is the result of months of testimony and analysis examined by the House and Senate Education Committees, the Ways and Means and Finance Committees, and the Appropriations Committee. It represents the most comprehensive reform of Vermont's education governance system since 1912. The final version of the bill gives school officials a set of tools and incentives they can use to lead conversations in their communities that focus on developing educational systems designed to ensure equity and efficiency of operations.

School district governance is a spirited topic. Proponents of consolidation assert that small school districts are inefficient, lack diversity in programming, and provide limited opportunities for students. They, and some researchers, claim consolidation savings can be realized in small school districts through reductions in administration and business services, increased class sizes, and coordination of personnel and building maintenance services (Andrews, Duncombe, & Yinger, 2002; Duncombe & Yinger, 2006; Fox, 1981). Opponents of school district consolidation assert that any mandate from the government to merge school districts is an affront to democracy and local control. This case study examined a Vermont school system that merged in 1996. It may serve as an example of the effect school district size has on expenditures and student outcomes. No evidence has been found that this type of case study research has been completed in Vermont. Therefore, the findings may inform school districts in their analysis of school district consolidation and support rightsizing Vermont's school systems.

This research project is important and timely due to the passage of Vermont's recent education law, Act 46. Act 46 (2015) provides incentives and mandates to school districts that enroll fewer than 900 students. The governance provisions of the bill are termed as voluntary, but it is evident that the legislation is meant to reduce the number of school districts in Vermont over the next five years. The legislation seeks to establish integrated education districts that serve 900 or more students and are responsible for the education of students in grades pre-K-12 (Act 46, 2015). Currently, Vermont has an array of school district configurations (e.g., pre-K-4, pre-K-6, pre-K-8, 5-8, 9-12). Most districts are not responsible for the education of students from pre-K through Grade 12. The Vermont Agency of Education, Vermont State Board of

Education, and a majority of the Vermont Legislature believe these disparate school governance structures are not the best way to serve students, taxpayers, and communities.

Act 46 (2015) outlines three paths or phases which school districts and communities must follow. The first two phases include incentives to voluntarily consolidate districts into preferred school governance structures (i.e., with over 900 pre-K-12 students). The third phase stipulated in the bill gives the State Board of Education and the Secretary of Education the authority to assign school districts that do not meet the criteria specified in the bill into a school district that does meet the guidelines. There are provisions in the bill that enable school systems to receive waivers if they can provide information demonstrating that students and their communities are better served by the current governance structure and that the district can achieve the goals outlined in Act 46 (2015). The wavier provisions also protect geographically isolated school districts. However, school districts that do not merge prior to July 1, 2020, will be at risk of being assigned by state officials into a school district that meets the provisions of Act 46. The authority of the state to consolidate districts gives this research project more value and urgency. If this case study can demonstrate that school district consolidation provides financial and educational benefits, school districts may choose to take a voluntary approach and receive tax incentives. Mandates are rarely well received, thus a voluntary approach to school district consolidation has the potential to make governance transitions more seamless and effective.

School district consolidation remains a heated and contentious policy issue in Vermont. This was evident in a February 16, 2016, *Education Weekly* article titled, "Rural School Districts Put on the Hot Seat." Burnette (2016) cited student enrollment and spending issues facing Vermont. Specifically, Burnette (2016) pointed out that Vermont spent an average of over $18,000 per student. This was one of the highest allocations in the nation. In the article,

Vermont Superintendent Association Executive Director Jeffery Francis stated, "We need to change as a matter of survival" (Burnette, 2016, p. 2). However, many Vermonters see school district consolidation as undermining the democratic process and as a backdoor way to close small schools. In addition to the *Education Weekly* article, *PBS News Hour* aired "Merging Small School Districts: Showdown in Vermont" on May 31, 2016. The program profiled a community in northern Vermont that was sharply divided on merging five separate school districts into one unified system. The *Education Weekly* article and *PBS News Hour* segment demonstrated the divisiveness and divergent opinions regarding reducing Vermont's 280 school districts and increasing the average number of students per district.

Over the past decade, William Duncombe and John Yinger of the University of Syracuse have emerged as authorities on school district consolidation and its effect on school spending. Duncombe and Yinger's (2007) study of school district consolidation in rural New York indicated that there are benefits to school district consolidation, particularly for very small school districts. As most of Vermont's smallest school districts are in rural areas, this research study is highly relevant to Vermont and this case study research. However, there are limitations in Duncombe and Yinger's analysis. Duncombe and Yinger (2007) pointed out that their study was not a complete cost-benefit analysis because the long-term impact of capital spending and changes in transportation costs are difficult to interpret.

Boser (2013) also asserted that school district consolidation could save money and that school district size affects efficiencies and overall education costs. Boser (2013) contended that American education governance structures are modeled after past eras and not designed to optimize resources. Boser's research is compelling, but lacks references to research that are not supportive of school district consolidation. Omission of differing perspectives and analysis is a

deficiency in Boser's research. Citing a wider range of studies would bring balance to that report and represent an unbiased approach. This is important due to the emotional and personal nature of school district consolidation.

Examining a school district that has consolidated in Vermont and presenting financial and student performance information from before and after consolidation may move the topic and discussion from one that is abstract, complex, and emotional to one that is well-rounded, educational, and tangible. In examining peer-reviewed studies that attempt to illuminate the effects of school district consolidation, no case study of a Vermont school district that has experienced consolidation was identified. Thus, this research project has the potential to be used by communities and policymakers to inform the consolidation process outlined in Act 46 and public policy in the future. Moreover, the vast amount of research done on school district consolidation is centered on efficiencies and expenditures. This study includes student performance as a variable that will be examined and presented. Comparing student results before and after consolidation provides communities and states considering school district consolidation with baseline evidence of its possible influence on student performance.

Significance of the Research Problem

Vermont has more school districts than it does towns. Vermont's average district size was 312 students in 2006 (Hoffman, 2007). This was the lowest average number of students per district out of all 50 states. The national average was 3,382 students per district (Hoffman, 2007). Vermont had 87 districts (out of 273) with fewer than 100 students in 2006. Only Montana had a higher percentage of districts with fewer than 100 students (Hoffman, 2007). Community members, scholars, and state leaders have questioned the cost-effectiveness and affordability of Vermont's small school districts. The Vermont Association of School Business

Officials (2010) issued a white paper reporting that school district consolidation could cut education costs by $32,000,000 statewide. This number has been used as grounds for school district unification. Conversely, there are skeptics who want to see more evidence from states that have experienced school district consolidations.

Opponents and proponents of school district consolidation agree that increases in Vermont's property tax rate and education cost per pupil are unsustainable. According to the Vermont Agency of Education (2011), the state's kindergarten through Grade 12 population has dropped by nearly 20,000 students from 1992 to 2012. During this same period, the cost per pupil has far outpaced inflation, and property tax rates have risen precipitously. Data provided by the National Education Association (2013) indicate that in 2002, Vermont's per-pupil spending average, $9,806, was below Connecticut and Massachusetts. In 2012, Vermont had risen to the highest average education spending per pupil in New England, at $18,571. This was almost $2,000 more per student than the next highest, Rhode Island, and $8,000 more than the lowest, Maine. Vermont's average annual increase in the rate of education spending was 6.6% from 2002-2012. As Vermont's student population has dropped over the past several years, the cost of education has climbed by nearly 83% (Picus, Odden, Glenn, Griffith, & Wolkoff, 2012).

Over 35 of Vermont's school budget measures failed in 2014. This is twice the number typically rejected by local voters. Inertia is not an option, as property tax rates are rising over 10 percent annually in many communities. Transformation of Vermont's school governance system may be possible if stakeholders understand potential efficiencies and savings. A case study that demonstrates the cost and education outcomes of rural school district consolidation may support Vermont communities in creating school district governing structures that address 21st century economic and education needs.

Therefore, this study explores the consolidation of a single Vermont district, the Waterbury-Duxbury School District, in order to inform current consolidation efforts taking place across Vermont. The Waterbury-Duxbury School District was formed in 1996 when two separate school districts merged to establish a school system of approximately 900 students. The size of the resulting school district aligns with the intent of Vermont's new school governance legislation, and the rural nature of the school district is similar to many of the school systems that are influenced by Vermont's 2015 school reform bill (Act 46, 2015).

Central Research Question

The central research question for this case study is: How do preconsolidation and postconsolidation expenditures and student performance results compare to teacher, parent, and school and community leaders' experiences and perceptions in the Waterbury-Duxbury School District?

Production theory and empiricism theory are the theoretical frameworks utilized to guide the research methods and understand the results. The research question was developed through review of the literature and studies that applied production theory to demonstrate the influence school district size has on expenditures. The purpose, direction, and underpinnings of the case study directly result from research that used production theory as a conceptual and theoretical framework. The most influential work and research examined was produced by University of Syracuse scholars William Duncombe and John Yinger. Empiricism theory was selected as an additional theoretical approach to support and develop the qualitative elements of the case study and research question. Empiricism maintains that knowledge and rational positions are developed through actual experience and real evidence (Locke, 1959).

The case study of the Waterbury-Duxbury School District followed a data collection process and methodology similar to what was utilized by Duncombe and Yinger (2007). Specifically, pre-consolidation and post-consolidation per-pupil costs, total expenditures, and revenue of the school districts that merged to form the Waterbury-Duxbury School District were analyzed and compared. Expenditures were collected and analyzed in the following areas: instructional, non-instruction, administrative, facilities and maintenance, debt service, transportation, local revenue, state revenue, federal revenue, interest revenue, and miscellaneous revenue. In addition to financial information, pre-consolidation and post-consolidation state-level student assessment data was gathered. This information was used to demonstrate the effect the school district merger had on costs and student performance. The researcher critically examined and compared pre-consolidation inputs and outputs to post-consolidation inputs and outputs. In addition to quantitative data, this study examined qualitative information collected during interviews with stakeholders who were attuned and associated with the formation of the Waterbury-Duxbury School District. The interviews inquired into whether their conceptions of the merger's influence on expenditures and student performance aligned with actual results.

Positionality Statement

As I pursued data that focused on possible financial savings and student performance results associated with rural school district consolidation, it is critical that I acknowledged and was cognizant of my biases. I have been an outspoken proponent of school district consolidation at the state and local level. During the 2014 and 2015 legislative sessions, I traveled to the Statehouse on three separate occasions to meet with the House Education Committee and the House Ways and Means Committee to share reasons for school district consolidation in Vermont. I referenced my experience as a superintendent who served eight separate school

districts, 45 board members, 2600 students, and five communities. My testimony included examples of inequity across districts, inefficiencies, redundancies, and programming inertia. Carlton Parsons (2008) claimed that a key building block in researchers' positionality is their perception of how they fit into the grand scheme of reality. Researchers' assumptions are built over time and based on personal experiences. Clearly, my personal experiences and frustration with a fragmented governance framework biased my view of school governance. However, I acknowledge that while there are reputable studies that assert that school district consolidation saves money and improves student outcomes, there also are reputable studies that find it does not.

Duncombe and Yinger (2007), Boser (2013), Shakrani (2010), and Dodson and Garrett (2004) indicated that school district consolidation can reduce education costs. Conversely, several other studies suggested that school district consolidation does not result in substantial savings (Bard, Gardener, & Wieland, 2006; Betty, 2010; Streifel, Foldesy, & Holman, 1991). Bard et al. (2006) wrote, "In studies from 1960 through 2004, there has not been evidence that consolidation of small districts into larger districts has necessarily reduced fiscal expenditures per pupil" (p. 43). In my review of the literature to date, I found the results to be mixed. Research from the 1960s, 1970s, and 1980s generally showed that school district consolidation may not reduce school expenses, but research reports published in the latter part of the 20th century and the early 21st century pointed to a decline in cost, particularly for small districts that merged into larger entities.

In addition to my experience as a superintendent of a multi-district system, my involvement in a failed consolidation effort in 2009-2010 shaped my perspective on the advantages and disadvantages of school district consolidation. The school system that I currently

serve as superintendent embarked on a school district unification study and plan in July 2009. An 18-member study committee spent 11 months constructing a detailed school district consolidation report that outlined the proposed structure of the unified system and the benefits of merging school districts. Vermont's Secretary of Education and the Vermont State Board of Education approved the plan in March 2011. In addition to preparing a plan, the committee held 11 community forums, developed a public relations campaign to educate and inform the communities that make up the school system, and brought a school district merger ballot measure to the electorate in June 2011. The proposal passed in four of the six towns and received a small majority of the comingled popular vote. However, by statute, all six towns had to separately pass the measure, so the merger failed and the governance structure did not change. To be frank, the failed district consolidation effort was a crushing defeat to me, many school board members, and the majority of the individuals who served on the voluntary merger committee. Without question, this experience had a significant impact on how I view school district consolidation.

I am quite sure teachers, school board members, and constituents know my opinions on school governance and school district consolidation. By honestly representing my biases, I enhance the possibility of gaining credibility for the study and establishing trust with participants and readers. Briscoe (2005) detailed how trust in the researcher influences the participants of a study, observers, and research quality. I recognize the ethical and practical issues that may transpire if I am unable or unwilling to manage the biases that have been formed because of my occupation, gender, and experiences. I strove to study the financial and achievement effects of rural school district consolidation objectively and report conclusions and findings in an impartial and scholarly manner.

Theoretical Frameworks

Production theory. A key objective of this case study was to determine the effect of school district consolidation on education expenditures and student outcomes in the Waterbury-Duxbury School District and then compare this objective data with school community members' opinions and theories. To collect and analyze data effectively, the researcher adopted production theory from economics as a foundational framework. Typically, production theory is utilized by private businesses to measure the resources drawn on to produce a product or service. A rudimentary way to define production theory is that it captures the process of converting inputs into outputs. Private organizations often use this framework to evaluate efficiency, quality, and production so that revenue and profit can be optimized. The theory also has been applied by nonprofit organizations to analyze expenses and results. Production theory dates back to the 19th century and has been used by economists and researchers to measure economies of scale, profit margins, and operational effectiveness.

Neoclassical economists such as Alfred Marshal and Karl Menger formalized some of the algorithms and methods used in production theory research today. The theory has morphed and evolved as scholars and researchers have used its principles to study complex and distinct operations. Production theory can be used to evaluate construction methods, transportation, sports teams, and fishing fleets (Cobb & Douglas, 1928; Husniah & Supriatna, 2015; Scully, 1974). It provides a practical framework that can be applied to a diverse set of organizations, systems, and functions. In addition, the flexibility of its application allows researchers to make modifications so it can be used to measure outputs and inputs in the private and public sectors. Duncombe, Miner, and Ruggiero (1996) wrote, "Production theory is a solid foundation, considerable modification is required for its application to the special features of the production

and provision of such public services as education" (p. 266). Duncombe et al. (1996) pointed out that school systems can be modeled similarly to private organizations. This is an example of the adaptability of production theory and its utilitarian qualities.

American scholars and economists Charles Cobb and Paul Douglas changed how the United States and the world use and reference production theory. Arrow et al. (2011) cited Cobbs and Douglas' 1928 report, "A Theory of Production," as one of the most influential papers ever published. Their analysis (termed Cobb-Douglas function) has been applied across venues and organizational sectors to analyze expenses and production. Arrow et al. (2011) asserted that their work has had a significant influence on the empirical and theoretical economics of our time. The methods and examination applied in research that follows production theory are often unique to the study, but when you analyze Cobb and Douglas' (1928) findings on labor, production, and expenses, it is not difficult to recognize the principles of their theoretical approach in seminal and contemporary research. Cobb and Douglas (1928) wrote:

> We have developed our theory from the movement of labor, capital, production, value, and wages for the manufacturing industries of this country considered as a whole. There is opportunity to apply the same, or an improved method of analysis, to other lines of industry such as transportation, mining, public utilities, etc., in this country and to similar data for other countries. (p. 165)

Their statement and findings are accurate, as businesses, colleges, farms, and governmental agencies use the fundamentals of production theory to determine the relationship between resource allocation and outputs (Deaton & Muellbauer**,** 1980; Duncombe et al. 1996).

Production theory in pre-K-12 education. As the cost of education has risen in the United States and the country has become more urbanized and suburbanized, public education

has turned to production theory to evaluate the influence of size on costs and student performance. Researchers have used production theory to analyze small, medium, and large school districts in order to assess the effect of size on expenditures and student achievement. Duncombe and Yinger (2007) wrote:

> School consolidation represents the most dramatic change in education governance and management in the United States in the twentieth century. Over 100,000 school districts have been eliminated through consolidation since 1938, a drop of almost 90 percent. This longstanding trend continues throughout the country, largely because consolidation is widely regarded as a way for school districts to cut costs. (p. 342)

A high proportion of the school district consolidation that has taken place over the past century has been in small rural school districts. This phenomenon is the momentum for much of the research that has been conducted to analyze the influence size has on school expenditures and student outcomes. Scholars and researchers like William Fox, William Duncombe, John Yinger, Mathew Andrews, Bruce Baker, Betty Cox, and Becky Cox used production theory as the principal theoretical framework for many of their research projects. These influential and respected researchers used production theory to interpret how size affects economies of scale, per-pupil costs, total school costs, and student performance. Production theory provided these scholars with the theoretical foundation required to effectively analyze and interpret results. According to Dumcombe et al. (1996) and Fox (1981), many studies on economies of scale in education lacked a theoretical base. Therefore, the results were inconsistent and difficult to interpret. Production theory supplies the conceptual framework necessary to effectively guide research methods and understand results (Duncombe et al., 1996).

However, opponents of school district consolidation and researchers who have applied the theory acknowledge the challenges in effectively measuring student performance. Duncombe and Yinger (2007), Fox (1981), Cox and Cox (2010), Andrews et al. (2002) and Baker and Duncombe (2004) cited limitations in measuring student outcomes. Controlling for poverty, race, and level of parent education is difficult because the definition of quality and the indicators used to evaluate value differ greatly from state to state and town to town. The size and scale of this research project eliminated this issue because it compared, collected, and analyzed pre-consolidation and post-consolidation data from one school system. Thus it was not as important to control for variables that may influence performance. Moreover, the researcher was able to identify some assessments that could be used to measure student outcomes.

As Vermont moves forward in reshaping its school governance structure, using production theory to model the effect of school district consolidation on per-pupil and overall education costs can increase community understanding of its efficacy and reduce anxiety around this significant policy change. Boser (2013) and Shakrani (2010) employed the principles of production theory in a hypothetical manner to show the possible financial effect of school district consolidation on communities. However, their research does not provide solid evidence about student outcomes. This case study aims to reveal school district consolidation's influence on student outcomes in one school district. The scale of the research will provide communities considering school district consolidation with a real example of its effect on student outcomes. This may allow stakeholders to predict how consolidation might affect students attending their schools. If the study indicates no change in student performance or a rise in student results and a reduction in expenses, communities may be more likely to embrace a change in their school governance structure.

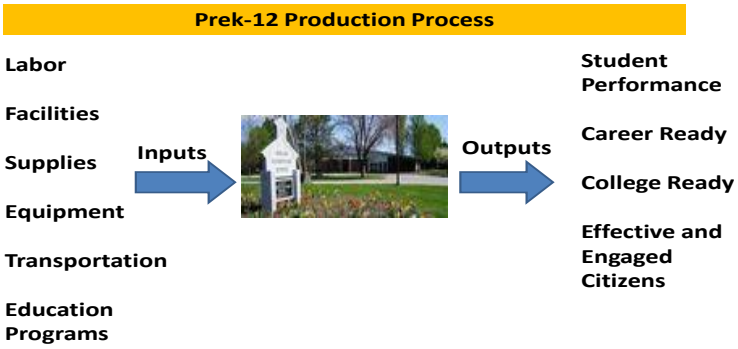

Figure 1. Production framework in pre-K-12 education. Source.

Production theory was an essential ingredient in this case study research. Production theory offered a conceptual framework for objectively gathering, analyzing, and presenting financial and student achievement data. Inputs reference the total cost of the resources and services necessary to operate a pre-K-12 school system. These included but were not limited to teachers, support staff, books, computers, administration, buildings and grounds, transportation, and supplies. Outputs refer to student performance on baseline assessment results, such as statewide assessments. This quantitative analysis and discovery was critical for comparing stakeholders' opinions to authentic and objective budget and student achievement data. Production theory was fundamental to the research question and requisite to the qualitative and quantitative data collection and analysis of this case study.

The timing of this case study research project appeared optimal due to the recent actions of the Vermont Legislature, a concerted effort by Vermonters to control the cost of pre-K-12 education, and the intensity and volume of discussion around school district governance in the state. In addition, this case study can show the communities of Waterbury and Duxbury the results of their school district merger and inform the planning and decision making of Vermont communities that are or will be contemplating school district consolidation.

Empiricism theory. Empiricism theory was employed to complement production theory and effectively examine and conceptualize the qualitative constructs of the case study. Empiricism emphasizes the importance of empirical evidence in formulating conclusions about an idea or concept over rhetoric and tradition. British philosopher and physician John Locke (1959) asserted that knowledge is acquired based on experiences, sense perception, and concrete effects. The converse of this theory is rationalism. Aristotle advocated for emotional and reasoned arguments in decision making (O'Neill, 2002). The term "reasoned" suggests evidence-based deliberation. However, deliberation and decision making often include rhetoric. A speaker can shape opinions through persuasion and message delivery. The message may or may not be based on objective evidence. Rational arguments do not necessarily align with factual evidence, but nevertheless can appear reasonable and intersect with emotions and fears. Empiricism theory uses objective evidence and actual experiences to test hypotheses and assumptions. The reasons for a change in belief and/or practice center on objective information and scientific inquiry.

Empiricism theory and school district consolidation. Nybladh (1999) explored whether citizens rely on a factual or emotional decision-making process while consolidating school districts. He found that groups who voted in favor had consensus-building processes that led to rational decision making (Nybladh, 1999). Fairman and Donis-Keller (2012) indicated that Maine communities relied on factual information such as partnering with neighboring districts whose tax base and education costs were similar to avoid large increases. The decision-making process in Maine's 2007 consolidation efforts often included community members' emotional and factual considerations (Fairman & Donis-Keller, 2012). Some Maine

communities attempted to strike a balance between passionate discourse and objective information.

No case studies have been identified that demonstrate the actual effects of school district consolidation on expenditures and student performance in Vermont. Therefore, opinions and viewpoints on school district consolidation are often based on rhetoric, anecdotal information, and research conducted outside the state. According to Nybladh (1999), the power of one single person who is strongly opposed and presents a strong argument can influence the outcome of a school district merger proposal. Stephens (1991) asserted, "Policymaking takes place in a politicized atmosphere fraught with dangers for participants, and decisions often seem to emerge through some 'non rational' process" (p. 12). Stephens (1991) claimed that mandated consolidation brings out highly emotional arguments and opposition. The time is right to move past conjecture to objective data. A real case study that compares perspectives and suppositions of school district consolidation to the actual results has the potential to move the discussion from the rationalist arena to the empiricist realm.

Chapter 2: Literature Review

This review of literature centers around one central question: How does school district consolidation influence budget expenditures and student performance? The framework follows this central question and is separated into the following distinct sections: evidence that suggests school district consolidation saves money; evidence that suggests school district consolidation does not save money; evidence demonstrating the influence school district consolidation has on student performance; claims, evidence, and justification of the thesis; and summary of the thesis. The streamlined structure and simplicity of the format is meant to help readers understand the complex issues intertwined in school district consolidation as well as differences in the research and in definitions of school district consolidation.

Based on an examination of the research and a review of pertinent peer-reviewed sources, it is clear that researchers, advocacy groups, and scholars have different methods of calculating cost effects when comparing actual budget results before and after consolidation. This assertion applies to both short-term and longitudinal expenditures. According to Adams and Foster (2002), "On the whole, empirical literature on school district size harbors evidence of positive, negative, and negligible effects of consolidation on student performance and educational economies" (p. 838). Lowen, Haley, and Burnett (2010) added, "Debates regarding the effects of school district consolidation are complex. There are multiple cost-benefit analyses in existence" (p. 3). There are divergent views and research findings regarding the cost implications and effects of school district consolidation. The purpose of this literature review is to evaluate the impact of school district consolidation on budget-line expenses and student performance. The narrow focus of this literature review is meant to inform stakeholders about the influence school district consolidation has on line-item budget expenses and student outcomes, not to determine whether school district consolidation is good or bad for students

and/or communities. In addition, this literature review illuminates some of the assumptions, history, categories, and definitions of school district consolidation that may be shaping public opinion, research, and legislation.

Evidence that School District Consolidation Saves Money

Duncombe and Yinger (2007) wrote:

> School consolidation represents the most dramatic change in education governance and management in the United States in the twentieth century. Over 100,000 school districts have been eliminated through consolidation since 1938, a drop of almost 90 percent (NCES 1999, Table 90). This longstanding trend continues throughout the country, largely because consolidation is widely regarded as a way for school districts to cut costs. (p. 342)

This preamble was the basis for many of the studies conducted by Duncombe and Yinger in the late 20th and early 21st centuries. These scholars reviewed and analyzed school district consolidation in New York and across the rest of the lower 48 states. Their 2005 study examined the pre-consolidation and post-consolidation expenditures of rural school districts that merged to form a larger district. Duncombe and Yinger (2007) measured educational expenses over 9 years to determine the effect of school district consolidation on rural New York communities. Their results suggest "doubling enrollment cuts operating costs per pupil by 61.7 percent for a 300-pupil district and by 49.6 percent for a 1,500-pupil district" (Duncombe & Yinger, 2007, p. 341). Duncombe and Yinger (2007) discovered that due to economies of scale, small rural school districts cut operational costs. In fact, even after adjusting expenditures to account for an increase in capital spending, Duncombe and Yinger (2007) found that the merger of two 1,500 student districts can reduce operating costs by 20 percent. Duncombe and Yinger (2007) stated,

"Overall, consolidation makes fiscal sense, particularly for very small districts" (p. 341). This groundbreaking study has been used by advocates of school district consolidation to promote and illustrate the benefits of unifying small rural school districts. In addition, researchers, policy analysts, and scholars have utilized their methodology to estimate the financial implications of school district consolidation in specific regions of the United States.

The growth and scale of education expenditures has fueled a sizable number of school district consolidation studies over the past several decades. Government agencies, legislators, and communities have been searching for ways to curb school costs and maximize resources. Fiscal realities and stakeholder interest have provided the impetus for studying America's school district governance framework. In addition to financial benefits from consolidation, scholars and economists have hypothesized that larger school systems can offer a greater range of educational opportunities at lower cost (Fox, 1981).

Fox (1981) examined 30 school district consolidation studies in order to establish a theoretical framework that might edify the public regarding the influence school district size has on expenditures and economies of scale. Fox (1981) wrote, "Failure to develop a theoretical base to adequately describe the behavioral relationships within which the local government operates may lead to incorrect inferences regarding whether size economies do or do not exist" (p. 273). Fox's (1981) analysis was based on studies that he believed were conceptually appropriate and used acceptable unit measures. Fox (1981) found that per-pupil expenditures were represented by U-shaped average cost curves. The U-shaped cost curves showed the level of enrollment where savings started and the level at which costs increased. Fox's (1981) analysis indicated school-level and district-level economies of size do exist within a specific range of

student populations. Fox (1981) found economies of scale in a number of the studies used to determine the cost-effectiveness of school district consolidation.

However, Fox (1981) was clear that schools and communities considering consolidation should proceed with caution. Data and analysis of the effects of school district size and consolidation are not consistent and not of equal quality. Fox (1981) stated:

> In sum, size economies results must be applied cautiously, and with full recognition of the unique characteristics of each place, because considerations, other than the finding that size economies exist, are vital to determining the cost implications of policy decisions. (p. 290)

In rural areas from Maine to Washington, school district consolidation is often proposed by policy makers as a way to increase efficiency and cut costs. Andrews et al. (2002) posed the following question: "Does the empirical research on economies of size support this policy?" (p. 245). As the country continues to struggle and rebound from a severe recession and stress builds on state and local resources, communities across the nation want to understand the financial effects of school district consolidation. Small rural school districts remain abundant in the 21st century. States and local communities want to know if these small rural school entities are driving up education costs and wonder if there might be a better way to structure school systems.

Andrews et al. (2002) found that significant savings in instructional and administrative costs may be realized by consolidating small school districts. However, their research pointed to diseconomies of scale for school districts above 15,000 students. Their findings and recommendations were based on analysis of three decades of empirical school consolidation research. A key conclusion of their study was the potential for notable savings in administrative and instructional costs from the consolidation of school districts with 500 or fewer pupils into

unified school districts of 2,000 to 4,000 pupils (Andrews et al., 2002). These results were based on a cost function analysis.

Andrews et al. (2002) acknowledged that production and performance studies that attempted to measure student outputs showed mixed results and that some evidence suggested that school size negatively influences student results and school quality. Their study pointed out that more evaluation is needed to determine the impact of size on student outcomes and education programming. Andrews et al. (2002) did not attempt to quantify the increase in operational costs that may be required to remediate students or the additional service costs that may be needed to accommodate students. This omission may be significant because summer school, remedial education, and at-risk supports can increase costs. Andrews et al. (2002) mentioned mixed results on student performance, but did not include the potential effect on education spending. This omission may reduce the validity of their findings.

Boser (2013) contended that school district size matters when determining cost-effectiveness, per-pupil costs, and overall budget expenditures. His research examined small school districts, defined as those with fewer than 1,000 pupils. Boser (2013) discovered that many states have large numbers of non-remote small school districts. Bose (2013) wrote, "Across the nation, we found that small, non-remote districts might represent as much as $1 billion in lost capacity, by which we mean money that many not have to be spent" (p. 2). This figure may not seem large when spread across the country, but estimates vary from state to state.

Boser (2013) estimated that California and New Jersey may be spending $164 million dollars more than necessary on small school districts and that 10 states accounted for about 68 percent or $650 million in lost potential costs. This research suggests that there are significant funds being spent in small school districts that might not be spent in a larger system.

Boser (2013) stipulated important caveats to his report. First, the calculations were estimates, not firm numbers. Next, the data was based on a cost-out approach or professional-judgment study. This approach has been questioned by school-finance experts because some believe it is too subjective. Nonetheless, the study does point to savings and cost efficiencies that may be achieved through school district consolidation. However, Boser (2013) cautioned against one-size-fits-all solutions. Boser (2013) claimed, "There is no easy solution to this problem, and the best solution for one district may not be the best solution for another" (p. 3). The study provided evidence that small districts experience diseconomies of scale that may be countered and resolved through examination on a case-by-case basis. This was a key finding in a Maine school district consolidation study as well. Fairmand and Donnis-Keller (2012) found that states considering school district consolidation should avoid one-size-fits-all mandates and support school districts in gaining efficiencies in a differentiated manner.

Duncombe et al. (1996) found that consolidation of school districts of fewer than 500 students can save a substantial amount of money. Their research provided a theoretical framework for evaluating public school costs and examined the implications of merging school districts of fewer than 500 students with neighboring systems. Duncombe et al. (1996) applied their cost model to 610 of New York's 696 school districts. Total per-pupil costs in 1990 decreased up to 6,500 students and began to climb beyond that point (Duncombe et al., 1996).

Figure 2 provides a visual of the potential cost implications as student enrollment increases:

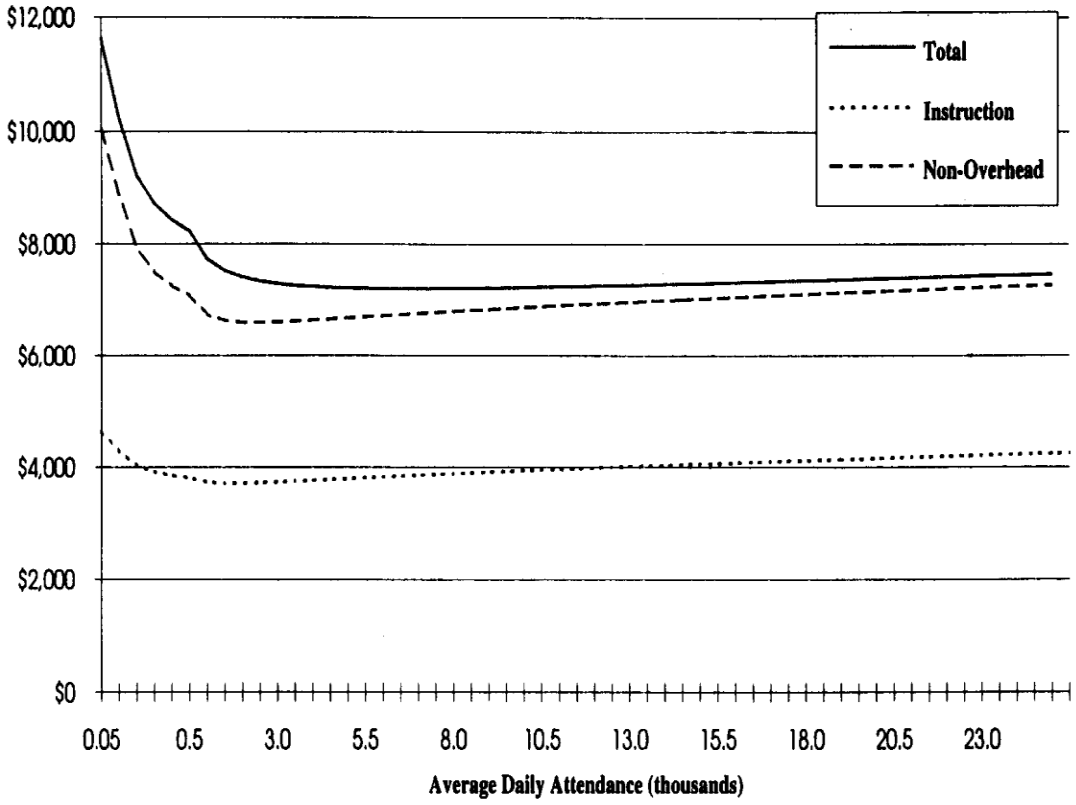

Figure 1. Estimated per pupil total, instructional and non-overhead costs, New York State school districts at different pupil levels.

Figure 2. New York State per-pupil totals. Ducombe et al. (1996, p. 275)

The cost estimates produced by Duncombe et al. (1996) indicate that communities and states considering school district consolidation should pay particular attention to school districts with fewer than 500 students. Duncombe et al. (1996) wrote, "The methodology developed in this paper should help state officials to identify potential candidates for consolidation and estimate the potential costs savings from consolidation" (p. 278). However, as noted in the study, the findings were based on estimates of cost, not actual longitudinal results collected over time (Duncombe et al., 1996). Obstacles such as geographic conditions and distance may

influence expenditures and the practicality of full consolidation of school districts with fewer than 500 students.

States and communities that are considering voluntary or mandated school district consolidation can learn from previous research on how size influences costs. Baker and Duncombe (2004) found that most states provide more financial support to very small school districts. This aid needs to be factored in when determining the potential cost savings and economies of scale. To demonstrate the influence size has on costs, Baker and Duncombe (2004) studied national trends and closely examined school districts in Kansas and Texas. Their findings indicated that school districts with 1,600–5,000 students optimized economies of scale and tended to have lower per-pupil expenditures. Their research looked at trends across different states and multiple school districts. A single case study that evaluates pre-consolidation and post-consolidation expenditures may provide authentic evidence that can be used by communities considering district consolidation.

A study of Arkansas school districts suggested that consolidation of the state's rural school districts may result in notable savings in salaries, supplies, and total costs (Dodson & Garrett (2004). Dodson and Garrett (2004) attempted to quantify cost savings from school district consolidation by creating a hypothetical model in which a number of small neighboring school districts were merged into one unified system. Their modeling and analysis identified substantial cost savings and economies of scale that may be achieved in Arkansas and other states through consolidating small school districts.

Based on the school district simulation, Dodson and Garrett (2004) estimated that consolidation of small school districts had the potential to cut overall education costs in Arkansas by 40 million dollars. Dodson and Garrett (2004) wrote, "In effect, consolidation would allow

more resources to be allocated toward possibly enhancing student performance" (p. 276). These empirical results could have policy implications for states contemplating school district consolidation.

The Great Plains region has experienced school district consolidation on a large scale. This movement was driven by the rise and fall of population in rural areas across this section of the United States. Small farms and the railroad drove growth from the 1880s to 1930s. As technologies changed and the industrial era took hold, the population migrated to urban areas (Bryant, 2002). Population changes forced Great Plains states to consider the viability of the large number of very small school districts. Efforts to close one-room schoolhouses marked the consolidation period (Bryant, 2002).

According to Bryant (2002), supporters of consolidation claimed it provided economies of scale and better educational opportunities. Conversely, supporters of small schools argued that the inefficiencies cited by proponents of school district consolidation were actually educational advantages. Bryant (2002) suggested that the desirable aspects of small rural schools districts would not trump the fiscal constraints facing school systems. Bryant (2002) wrote:

> The future well being of rural schools in the Great Plains region is uncertain since they are increasingly dependent upon state sources of funding to serve the needs of a sparse population with a local property tax base which may be insufficient to provide for rural education. (p. 18)

As state revenues shrink and education demands increase, the fate of small rural school districts is in the balance. School district consolidation has slowed in the Midwest since the 1970s. However, small school reform and school district consolidation continues in sections of the Midwest. States such as Illinois, South Dakota, and Indiana have provided incentives to

promote school district consolidation (Zimmer, DeBoer, & Hirth, 2009). Indiana recommended consolidation of districts with less than 2,000 students and offered grants to districts interested in merging.

To inform policy and the public, Zimmer et al. (2009) used data from 292 Indiana school districts from 2004 through 2006 to predict how enrollment influenced education costs and attendance. Their study utilized a distinct and firm method to estimate costs related to district consolidation. This was very similar to the methodology applied by William Duncombe in some of his research (Duncombe et al., 1996; Duncombe & Yinger, 2007). The Indiana study indicated economies of scale were optimal at an enrollment of 1,942 students, with a 95% confidence interval spanning from 1,300 to 2,903 students (Zimmer et al., 2009). This suggests efficiencies and cost savings begin to increase at 1,300 students and start to decline at 2,903 students. Figure 3 shows the decline and rise of per-pupil expenditures:

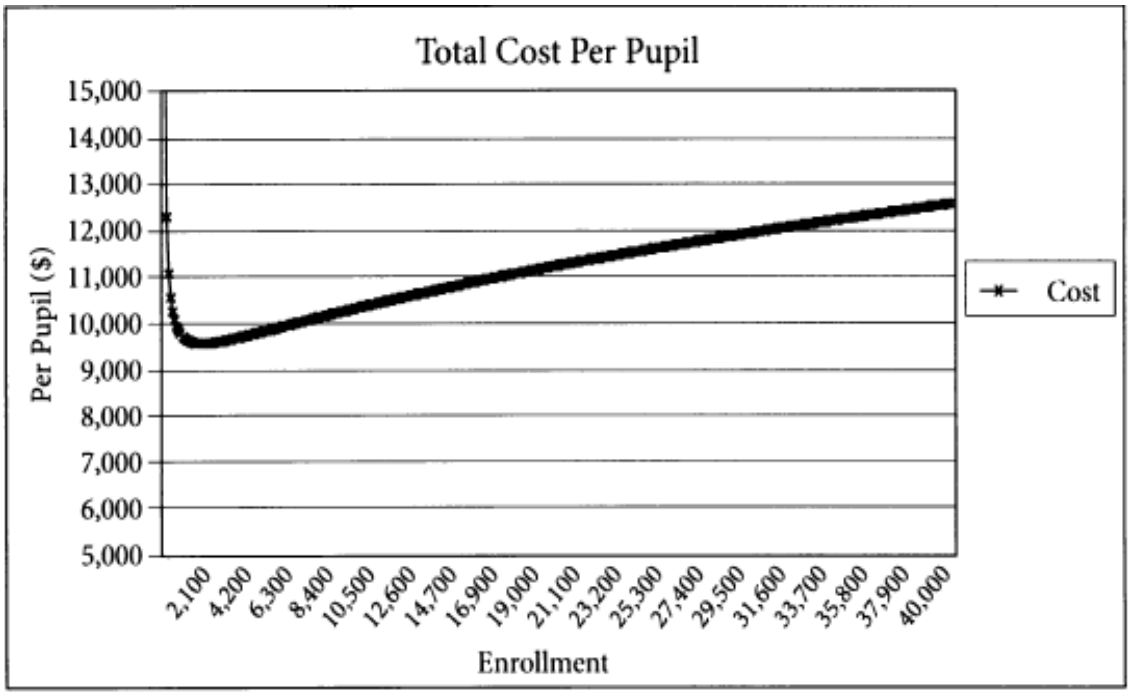

Figure 3. Enrollment and total cost per pupil. (Zimmer et al., 2009, p. 111)

Zimmer et al. (2009) presented evidence showing that school district consolidation can result in lower per-pupil costs, particularly when small districts merge. However, the student range is narrower than indicated in other studies. Zimmer et al. (2009) claimed that transportation costs and capital expenses increased per-pupil expenses once enrollment reached the 2,000 mark. These results may reinforce the notion that school district consolidation should be examined and implemented on a case-by-case basis, not imposed by state, federal, or local governments.

Shakrani (2010) applied Duncombe and Yinger's (2007) methodology to study the potential financial effect of school district consolidation in 10 Michigan counties. The study used data sets to estimate the influence school district consolidation might have at the county level. It did not attempt to evaluate how school district consolidation affected student achievement or public opinion. The primary purpose of the research was to model the cost implications of county-wide school district consolidation. Using Duncombe and Yinger's (2007) mathematical model, Shakani (2010) hypothesized that small and medium districts would realize savings in operating, instructional, administrative, and transportation costs. Shakani's (2010) results suggest that significant savings could be achieved through county-wide school district consolidation. Shakani (2010) wrote, "Overall, consolidation seems to make fiscal sense, particularly in rural and small districts" (p. 8).

Evidence that School District Consolidation Does Not Reduce Costs

Streifel et al. (1991) conducted a longitudinal study of 19 consolidation efforts. Their research compared pre-consolidation and post-consolidation expenditures and revenues from 1980-81 through 1983-84 to determine the financial impact of school district consolidation. In addition, Streifel et al. (1991) presented a historical commentary on the evolution of school

district consolidation, including some of the espoused advantages and disadvantages. Studies were cited that indicated savings were not consistent. Factors such as capital expenditures and transportation can affect costs (Streifel et al., 1991). Expenditures may vary depending on the size of the consolidation effort, its influence on school size, square miles in the consolidated district, and the expenditure choices of school boards. The longitudinal study conducted by Streifel et al. (1991) concluded that, with the exception of administration costs, there were no significant financial advantages or cost savings found in their analysis of 19 consolidation initiatives. Streifel et al. (1991) wrote:

> The outcomes of this effort seem to corroborate recent research by concluding major financial advantages are not a necessary outcome of school district consolidation. Administrative costs increased at a significantly slower rate than state average costs. However, in the overall budget this may be less than five percent of the budget (Far West Laboratory, 1988) and may not impact the overall expenditure rate to a large degree, especially in smaller rural districts. There were no significant differences in the rates change in the categories of instruction, transportation, operations and maintenance, total costs, total revenue, and capital projects, when compared to state average costs. (p. 15)

Streifel et al. (1991) pointed out that financial results from district to district were not fixed and they urged districts contemplating merging school districts to focus on localized and individual factors.

Cox and Cox (2010) studied the longitudinal effects of school district consolidation by comparing the pre-consolidation and post-consolidation data of a large urban school district in Tennessee. The consolidated district served over 40,000 students in Chattanooga and Hamilton County. Cox and Cox (2010) indicated that school district consolidation of this magnitude

substantially increases costs. Cox and Cox (2010) disaggregated expenditures by total, per-pupil, staffing, administration, operation and maintenance, and transportation costs. Their analysis discovered that from 1997-98 to 2006-07 overall costs increased by over 50 percent and per-pupil expenditures increased by 68 percent. Cox and Cox (2010) wrote, "When the collective data are considered, it is clear that the merger produced a less efficient and effective school district" (p. 91). Figure 4 presents a cost comparison included as part of the study.

Table 5 displays expenditures for each of the two time periods.

Table 5. Expenditures

	1997-98	2006-07
Total Current Expenditures	$210,641,757	$318,384,707
Total Operating Expenditures	$193,053,408	$323,062,058
Average Per Student Expenditures	$5,150	$8,668
Instruction	$133,006,821	$202,683,191
Instructional Staff	$10,059,414	$19,511,512
Administration	$18,678,310	$29,158,078
Operation and Maintenance	$19,893,046	$26,295,603
Transportation	$8,648,454	$12,627,864

Figure 4. Expenditures. (Cox & Cox, 2010, p. 88)

DeYoung and Howley (1990) studied the political dynamics and effects of school district consolidation that took place in rural West Virginia during the latter part of the 20th century. They showed that school costs increased after consolidation (DeYoung & Howley, 1990). DeYoung and Howley (1990) observed that advocates of small school reform dismissed some of these findings and touted the educational value and added student opportunities of school district consolidation. DeYoung and Howley (1990) pushed back on those claims and presented evidence indicating that low income students in particular benefitted from small rural school experiences. The results of their case study may counter claims of projected efficiencies and

savings from small school district consolidation. However, their findings focused primarily on closing small schools rather than the consolidation of school districts. Bard et al. (2006) wrote, "Despite the terminology chosen by researchers or bureaucrats, most community members continue to use the term 'consolidation' when referring to any type of school unification, reorganization, or merger" (p. 41). Defining the difference between school consolidation (closing one or more schools and creating a larger school) and consolidating school districts (combining multiple school districts) may be important in determining the actual cost and educational effects.

Bard et al. (2006) claimed the research on the cost-effectiveness of small school district consolidation is not clear and that it may not necessarily reduce per-pupil expenditures due to higher dropout rates in larger schools. Bard et al. (2006) cited evidence suggesting that students who drop out are more likely to be unemployed and receive welfare benefits, therefore small schools support the tax base and reduce government expenditures. In addition, there is research that indicates communities that close their school suffer from economic and social problems (Lyson, 2002). Bard et al. (2006) concluded:

> Most successful consolidations between districts have maintained a school in each town involved. In many cases, the high school has been located in one town while the elementary and/or middle/junior high was located in the town of the second consolidated district. Therefore, both towns maintain a school which lessens the socioeconomic and fiscal impact of the consolidation. (p. 44)

Bard et al. (2006) pointed out that school district consolidation may not equate to school closure if structured in a way that maintains a school in each of the communities that are part of school district unification. This distinction may be important to future studies and for defining research

methodology. In addition, Bard et al. (2006) pointed out that estimates of the optimal school size vary widely depending on the researcher and the time period.

Gordon and Knight (2008) studied school finances, student performance, and whole-school results in a sample of Iowa school systems that had consolidated in the 1990s to measure the influence school district consolidation had on education quality and costs. Results showed an increase in expenditures (Gordon & Knight, 2008). However, in a statistically significant number of the districts that consolidated, expenses were offset by state incentives. This revenue produced a surplus for the new district. Gordon and Knight's (2008) findings indicated that state incentives produced surplus revenue. Without this funding, short-term costs may have produced budget deficits. Long-term costs were not addressed in their study. Gordon and Knight (2008) wrote, "We have measured short-run effects, and the long-run effects of integration are unclear" (p. 423). This may be an important caveat in quantifying the longitudinal influence of school district consolidation.

Hanley (2007) illuminated the influence transportation may have on total cost savings from school district consolidation. Hanley (2007) suggested that secondary costs like transportation have been underanalyzed by researchers and policymakers. Hanley (2007) asserted that most research looks at administrative savings that may result from school district consolidation but not at some of the ancillary cost factors like food services, transportation, and capital expenditures. Hanley applied a mathematical and bus route model to Iowa in order to understand the effects transportation costs may have on budget expenditures through school district consolidation. Hanley (2007) claimed school districts that consider consolidation are often rural, with students spread over a large geographic area. These factors resulted in more students needing busing because they lived far away from designated schools.

Under the conditions simulated in Hanley's (2007) study, operational transportation costs would increase between 0.6 and 10.6 percent and capital costs would increase from 0.7 and 7.7 percent. This research points out the importance of including secondary costs in evaluations of cost savings that may be realized by school district consolidation. However, Hanley mentioned that the overall impact of the increased transportation costs detailed in his scenario did not eliminate the estimated cost savings projected by Iowa, but did suggest that lawmakers and communities needed to account for secondary expenditures like transportation.

Hanley's study assumed that some schools would be closed as a result of school district consolidation. This is an important element of that study to note because school closure is not always a component of school district consolidation. Separating school consolidation from school district consolidation and defining the differences may be important in attaining accurate financial results. Hanley was not explicit in noting this variable. An omission of this nature and magnitude may reduce its validity.

Colegrave and Giles (2008) conducted a metaregression analysis in order to compare results of previous studies on school district size and economies of scale. Results suggested that the optimal size for maximizing cost savings and maintaining quality is 1,543 students at the U.S. secondary level (Colegrave & Giles, 2008). The study focused primarily on high school age students, but did provide data that may be useful in determining what a pre-K-12 school system can do to maximize quality and financial investment. This was one of the few studies that examined school expenses and quality measures such as student performance. As this was a metaregression analysis, it used data from multiple districts and sources. Thus, it provided macro level data rather than the specific budget and quality outcomes that can be acquired from single case study.

Galles and Sexton (1995) claimed that the large-scale school district consolidation that has taken place over the past 50 years was motivated primarily by the assumption that bigger school districts create structures that provide greater value at a lower cost per pupil. Their research indicated that this theory may not be accurate. According to Galles and Sexton (1995), immense school districts have not resulted in efficiencies. In practice, evidence indicates large-scale school district consolidation creates diseconomies, and little empirical data exists that indicates it achieves its proposed objectives, such as increased opportunities at a lower cost (Galles & Sexton, 1995). An exception noted by Galles and Sexton (1995) is the consolidation of very small school districts. Galles and Sexton (1995) wrote, "In fact, the accumulated evidence points to the clear conclusion that, except for consolidations of very small districts, there are no economies of scale to local education" (p. 241). Their analysis suggested that there is relevant and reliable data to counter claims that school district centralization on a grand scale is not cost-effective.

Adams and Foster (2002) analyzed the influence of school district size on costs to better inform school reform in Kentucky. Their study was prompted by comments made by former Kentucky Governor Brereton Jones, who asserted that the state had too many small school districts and that the state could reduce education costs and improve efficiency by consolidating small school districts (Adams & Foster, 2002). Adams and Foster's (2002) findings indicated that the state would not save money by consolidating school districts because the most significant variable in local education costs was property wealth, not school district size. Essentially, Adams and Foster found that wealthier towns spent more money on education. District size did not appear to be the driving factor in per-pupil expenditures. Adams and Foster

(2002) suggested that income and property values are the key indicators in school district spending.

The largest cost driver for most school systems is personnel, in particular teacher salaries and benefits. As states and school systems discuss and consider the merits of school district consolidation, an important factor to study is the effect on teacher salaries. Furthermore, how might this influence school budgets? Research suggests that teacher salaries increase with the size of the district (Rose & Sonstelie, 2010). However, Rose and Sonstelie (2010) claimed student to teacher ratios were higher in larger districts, which blunted the impact on budget expenditures. The average school district size in Rose and Sonstelie's (2010) study was 7,371 students, and 15 of the 771 California school districts included in the study exceeded 36,500 students. The researchers primarily used large urban school districts in the sample. Duncombe and Yinger (2006) also examined the influence of school district size on per-pupil cost and found that California school districts with enrollments of 36,500 had the lowest cost per pupil. Conversely, smaller school districts of 1,000 students had a per-pupil cost that was 16% higher than school districts of 36,500 students (Duncombe & Yinger, 2006). These studies indicated that teacher salaries were higher in larger school districts, but higher student to teacher ratios and lower per-pupil costs could create economies of scale.

Supporters of school district consolidation often emphasize the benefits of school district consolidation, specifically the savings for taxpayers from economies of scale and lower per-pupil costs. Fox (1981) studied early school district consolidation data and concluded that cost savings can be achieved in school districts with 1,000 to 30,000 students. Andrews et al. (2002) noted that diseconomies of scale were present for school districts of 6,000 students. Differences in research results have spurred further analysis on a national scale. Robertson (2007) examined

district-level data from the 99 largest districts in the United States for the 1999-2000 school year. Robertson used a mathematical model to predict total district expenditures over time. Results indicated that per-pupil costs increase as the district size expands (Robertson, 2007). However, Robertson (2007) noted, "variables for class size and school size were also significant and negatively related to total per pupil expenditures" (p. 624). In addition, Robertson (2007) discovered that the preponderance of special education students and English language learners was a significant variable in total per-pupil expenditures.

Robertson (2007) claimed the data from his study disproved the hypothesis and assertion that larger school districts were less expensive for states, communities, and taxpayers. This may be accurate, but it is important to emphasize that Robertson's (2007) sample was the largest 99 school districts in the country. According to the National Center for Education Statistics (2013), the largest 99 school districts in 2011 ranged in size from 1,000,000 to 47,000 students. These findings may discount claims that "bigger is better," but school districts with enrollments of this scale are beyond the scope of most of the research examined as part of this literature review. Peer-reviewed studies and empirical data on school district consolidation support Robertson's suppositions and do not indicate that districts with 47,000 or more students obtain cost benefits and economies of scale (Andrews et al., 2002; Baker & Duncombe, 2004; Duncombe & Yinger, 2007; Fox, 1981).

Sher and Tompkins (1976) claimed, "The most successfully implemented education policy of the past fifty years has been the consolidation of rural schools and school districts" (p. 95). Extensive school and district consolidation took place between 1930 and 1970. This was largely driven by interests in controlling costs, saving money, and expanding opportunities for students. In addition, education professionals advocated for school and school district

consolidation. Sher and Tompkins (1976) contended, "Education professionals genuinely regarded consolidation as a panacea and, consequently, displayed considerable zeal in developing consolidation plans, marshalling favorable evidence, and lobbying on its behalf with state and local policy-making bodies" (p. 96).

Sher and Tomkins (1976) disputed assertions that school district consolidation was better for students, created economies of scale, or added efficiency to school systems. Their research indicated that diseconomies of scale offset savings and efficiency. Capital expenditures, transportation costs, and salaries increased due to seniority and retention of the more experienced personnel after consolidation (Sher & Tomkins, 1976). These factors negated potential savings and economies of size. Sher and Tompkins (1976) suggested, "In most rural areas there is virtually no inherent differences in the operational costs of districts anywhere within the range of 400 to 1,100 students" (p. 98). Their research and investigation indicates that school district consolidation may not be the silver bullet in solving education funding and programming issues in rural areas. However, Sher and Tomkins (1976) mentioned that economies of scale are not void in rural education, but that added costs attributed to school district consolidation needed to be factored in when determining the overall impact on budgets.

In 2007, Maine began transforming its school district and governance structure on a grand scale. Legislation passed that would reduce the number of school districts in Maine from 290 to 80. The legislative initiative's three primary objectives were to improve educational opportunities and equity, reduce the cost of providing education, and increase efficiency in education delivery (Fairman & Donis-Keller, 2012). In regards to reducing cost, Fairman and Donis-Keller (2012) found that cost saving estimates varied because of differences in debt, education spending, and property values. Fairman and Donis-Keller (2012) noted that district

leaders and regional consolidation planners were concerned that education costs could go up as a result of school district consolidation. Fairman and Donis-Keller (2012) wrote:

> District leaders and regional planning members voiced strong concern that consolidation could increase the cost of education and local tax rates in some communities. This was particularly salient for groups in eastern coastal Maine where waterfront property values had skyrocketed while the K-12 enrollment had declined (p. 29).

Fairman and Donis-Keller (2012) indicated that many districts were not able to identify reductions in education costs. Some predicted increases in the tax rate and overall education expenditures during the regional planning process. The disparities in costs between school systems and local tax rates made it difficult for school districts to select partners to merge with. All of the groups studied had concerns about the financial implications of school district consolidation. Fairman and Donis-Keller (2012) stated, "Eight of the 15 groups, district leaders and planning members were either skeptical about the potential for cost savings or were adamant that costs would increase" (p. 29). These concerns were significant because the basis for their apprehension was an evaluation of school district budgets, debt, and tax rates. Many district leaders stated that the only way to achieve savings would be to close small schools that had high per-pupil costs (Fairman and Donis-Keller, 2012). School closure was not stipulated as an overarching goal of Maine's 2007 redistricting legislation. The political issues and community anxiety that often surround school closure and the absence of clear examples of cost savings may have influenced the pace of school district consolidation in Maine.

Consolidation's Influence on Student Performance

There are very few studies that directly examine the impact of school district consolidation on student achievement. Therefore, limited empirical evidence is available on how

student performance is affected by school district consolidation. Furthermore, the majority of research examined in this literature review focused on increasing school sizes as part of school district consolidation. Closing schools and increasing school size are not necessarily a function of school district consolidation because school districts are often made up of multiple schools. Increasing school size may be a byproduct of school district consolidation, but in its purest form school district consolidation is a merger of governance and administration, not an expansion of school size. Moreover, contemporary and longstanding research on school district consolidation typically analyzed performance trends across several merged districts. Thus, what appears to be absent in the research is a case study of a single consolidated district.

In the 1990s, Dutch residents experienced school consolidation reform that was intended to increase the minimum school size and decrease the number of schools in operation. De Haan, Hessel and Oossterbeek (2016) studied the effect of consolidation on student achievement. Their findings indicated that an increase in school size of 10 percent had a slight positive effect on student achievement (De Haan et al., 2016). The study suggested that increases in school size, expansion of choice, and reduced competition between schools did not have a negative influence on student achievement. Conversely, Beuchert, Humlum, Nielsen and Smith (2016) found that a surge of school consolidation in Denmark in 2010-2011 had an adverse impact on student performance, particularly for students who experienced school closure. That study demonstrated that individual student test scores decreased after school consolidation, but the declines in achievement diminished over time (Beuchert et al., 2016).

Walberg and Fowler (1987) and Ferguson (1991) found a negative relationship between student achievement and district size in New Jersey and Texas. Sebold and Dato's (1981) study of California high schools and Ferguson and Ladd's (1996) research on elementary schools in

Alabama indicated that district size had a positive influence on student achievement. Cotton (1996) claimed that small schools and districts often equate to better student attitudes, increased teacher motivation, a stronger sense of belonging among students, and more effective teaching practices. Johnson, Howley, and Howley (2002) asserted that larger schools, which are often an outcome of school district consolidation, negatively affect quality and are detrimental to students living in poverty. These findings suggest district consolidation can do the most damage to students who need public schools the most. Berry and West (2008) found different evidence. They examined data on three cohorts of students born between 1920 and 1940 from a microsample of the 1980 Census and found that an increase in district enrollment of 947 students is associated with a 2.1 percent increase in future earnings. Additionally, there was no negative influence on student achievement (Berry & West, 2008).

School District Consolidation Research in Vermont

According to the 2010 U.S. Census, Vermont is ranked 49th in total population. Only Wyoming has fewer residents. Vermont's rural nature and small town makeup are factors that led to the establishment of over 280 school districts. The state has more school districts than towns. These school districts were vibrant and necessary during the 19th century and part of the 20th century. However, changes to Vermont's economy and a decline of over 25,000 K-12 students since 1990 have forced the state to consider modifications to its school district governance model (Vermont Agency of Education, 2011). The debate on how to respond to demographic and economic changes and the evolving needs of 21st century learners has been spirited, passionate, and at times divisive.

The fact that no peer-reviewed studies of school district consolidation in Vermont were identified as part of this literature review highlights the need for close examination of the

possible effects of school consolidation in the state. An analysis of a Vermont school district that consolidated 20 years ago may inform communities and policy makers. The Waterbury-Duxbury School District resulted from one of the few pre-Act 46 district mergers in the past century. Thus, expenditure and student performance information mined from the district can provide powerful and relevant information to Vermont communities and school districts studying consolidation in order to meet the requirements of Act 46.

Claims, Evidence, and Justification of Thesis

School district consolidation remains an important and controversial issue for many communities and states across America (Andrews et al., 2002). As education standards and requirements become nationalized and legal and regional efforts to equalize educational opportunities and resources are implemented, states will most likely be required to take more responsibility for funding schools. Bard et al. (2006) asserted:

> Throughout the history of schooling in America, school consolidation has been a way to solve rural issues in the eyes of policy makers and many education officials. Today, faced with declining enrollments and financial cutbacks, many rural schools and communities continue to deal with challenges associated with possible school reorganizations and consolidations (p. 40).

Due to the aforementioned trends, school district consolidation will continue to be considered as a method for solving some of the outstanding issues facing school districts. However, there does not appear to be enough consistent empirical evidence to unambiguously recommend school district consolidation as a way to reduce education costs and gain economies of scale. In some cases, it appears to have been finically advantageous. In others, the evidence points to an increase in overall costs. Factors such as state incentives, long-term debt, and

demographics are so uneven from community to community that establishing comparative data is challenging and in some cases impossible. In addition, empirical evidence that demonstrates the influence of school district consolidation on student achievement is sparse and inconsistent. There is no conclusive evidence regarding school expenditures or academic results. Therefore, a case study that measures these factors can be very useful to states and communities considering school district consolidation. Nowhere in the country is this more acute than in Vermont, where towns and districts are trying to cope with recent school district consolidation legislation.

A number of communities in rural and urban America are experiencing declining enrollment, fiscal challenges, and pressure from constituents and state government to reduce spending and elevate opportunities for students. Stakeholders are looking for clear and definitive solutions. Unfortunately, the research on school district consolidation is diverse, differentiated, and conflicting in its results. Unique characteristics of communities and the incongruent effects on cost and performance make it difficult to draw conclusions about the financial and academic advantages or disadvantages of school district consolidation. The contradictions in the research suggest that states and communities investigating school district consolidation should be careful in drawing absolute conclusions from past and contemporary school district consolidation research. Ornstein (1992) found the data on school district consolidation to be inconclusive.

In addition, there appear to be few longitudinal studies that track education expenditures before and after consolidation. The findings and results of a number of studies reviewed were based on mathematical models that attempted to simulate what might happen, or were based on meta-analysis. These types of studies offer valuable information, but they are not a substitute for real data collected over time and through case studies.

This literature review presented evidence that supports and refutes the cost and educational benefits of school district consolidation. However, much of the research reviewed revealed that school district consolidation should be determined on a case–by-case basis (Andrews et al., 2002; Bard et al., 2006; Bryant, 2002; DeYoung & Howley, 1990; Duncombe & Yinger, 2007; Shakrani, 2010; Streifel et al., 1991). The thesis derived from the examination of over 25 peer-reviewed studies is that the financial and education effects of school district consolidation are inconsistent and uncertain, and are influenced by size, demographics, and location. The balance of studies and results included in this literature review support this argument.

Conclusion

Fox (1981) wrote, "Size economies research must be used cautiously when determining what happens to education expenditures" (p. 289). This cautionary note is embedded in the thesis derived from reviewing and reflecting on research that suggests school district consolidation can reduce expenditures and elevate student performance and also studies indicating that school district consolidation creates diseconomies of scale, elevates education costs, and negatively influences student achievement. The divergence of empirical evidence on the cost and education quality implications of school district consolidation indicates that there is no consensus regarding the effect of school district consolidation on per-pupil spending, line-item budgets, long-term costs, and student performance.

The conflicting research findings suggest that school district consolidation should be determined through analysis and discussions at a localized level. Wholesale and mandated school district consolidation may not provide communities and state governments with consistent results. Therefore, policymakers should proceed with caution when considering implementing

far-reaching school district consolidation measures. Some of the recent challenges documented in Maine should serve as notice that the effects of statewide school district consolidation are not linear and that the challenges and obstacles in implementation are noteworthy. Currently, opponents and advocates for school district consolidation are working off assumptions and opinions, not from specific examples. The divergence in research is fueling this sociological effect. That is why it is vital to offer case study evidence so individuals, communities, and policymakers can see the actual effects of school district consolidation.

Communities interested in merging with neighboring school districts should closely and carefully examine the potential effects. For states like Vermont that have many small rural school districts with fewer than 500 students, there is a substantial body of evidence that shows consolidation is cost-effective (Andrews et al., 2002; Boser, 2013; Bryant, 2002; Dodson & Garrett, 2004; Duncombe et al., 1996; Duncombe & Yinger, 2007; Fox, 1981; Shakrani, 2010; Zimmer et al., 2009). However, transportation and capital expenses related to the formation of a unified school district need to be studied closely in order to understand the influence on overall and per-pupil expenditures.

A key finding and notable implication that has come out of this literature review is that a one-size-fits-all approach to school district size and configuration is not wise, practical, or widely supported in research. As Vermont and other states across the country search for ways to cut costs and contemplate the advantages and disadvantages of school district consolidation, leaders may want to take a close look at the range of research available on the potential and documented longitudinal effects of school district consolidation. Based on the examination of relevant peer-reviewed research included in this literature review, school district consolidation decisions should be made locally, rather than at a county, regional, or state level.

Chapter 3: Research Design

Questions regarding savings, efficiencies, and the effect on student results accompany school district consolidation in Vermont. There is a need to show Vermont communities and policy makers the possible effects school district consolidation has on expenses and student outcomes. Opponents of school district consolidation claim that the provisions and requirements in Act 46 are an affront to local control and that there is no evidence that school district consolidation reduces costs or increases opportunities for students. This is an emotional issue and a conversation that is filled with hyperbole and opinion. An objective of this doctoral thesis was to examine the differences between individual perspectives and opinions about school district consolidation and the actual budget and student achievement results after school district consolidation. The research question for this project was: How do preconsolidation and postconsolidation expenditures and student performance results compare to teacher, parent, and school and community leaders' experiences and perceptions in the Waterbury-Duxbury School District?

A school board member, school administrator, parent, town administrator, and teacher affected by and involved in the Waterbury-Duxbury School District consolidation were interviewed in order to garner their views on how the consolidation influenced school expenditures and student achievement. An additional objective was to understand the process of obtaining a successful merger vote. Interview data was compared to archived budget reports, annual reports, public documents, and state assessment results to determine how individual perspectives compared to objective information.

Purpose Statement

The purpose of this case study was to understand and describe how personal perceptions of school district consolidation aligned with actual budget and student performance results. In

order to obtain this information, stakeholders who were part of the Waterbury-Duxbury School District consolidation were interviewed. The interview results were compared to financial and student assessment reports before and after consolidation to understand how stakeholder viewpoints about the school district consolidation compared with objective data. With voluntary and mandatory school district consolidation facing Vermont communities, a case study of a district that has already merged could inform local planning and discussions and provide policymakers with real budget and student achievement data from a consolidated school district.

Research Design

A key component of this research was to ascertain how individual beliefs about school district consolidation compared to real outcomes in a Vermont school district that merged 20 years ago. In order to make this comparison, student performance data from before and after consolidation were evaluated to determine whether there was a difference (Duncombe et al., 1996). In addition, expenditures were analyzed to determine whether per-pupil expenses increased or decreased after consolidation. Results of inputs (expenses) and outputs (student performance on state assessments) were compared to participant responses to see whether perceptions matched actual results. This research could inform school district consolidation studies and planning currently taking place in Vermont. Opinions, speculation, and anecdotal discussions regarding school district consolidation have been widespread across Vermont, but very little objective or case study information has been presented to Vermonters. Conducting a case study on a school district that has already consolidated may reduce conjecture and inform communities' actions as well as public policy.

Seminal author and scholar Robert Stake (1995) grounded his approach to case studies in a constructivist paradigm. According to Baxter and Jack (2008), constructivism is based on

society's construction of what is real. Constructivism and the case study method align with the purpose and objectives of this research project. A goal of this study was to provide solid data showing the influence of school district consolidation on costs and student performance. In addition, the study demonstrated the connections and incongruities of stakeholders' beliefs and perspectives regarding the effects of school district consolidation. This information can be used by Vermont school districts considering consolidation to debunk myths and anecdotal claims of groups and individuals who support or oppose school district consolidation. Yin (2009) asserted that archived data can be compared to individual perspectives to identify biases. Revealing biases around school district consolidation can move the debate from the emotional domain to an analytical process.

Research Tradition

According to Creswell (2013), case study research has an extensive and rich history across many fields. Social scientists, anthropologists, sociologists, doctors, and law professionals have utilized the case study approach to closely analyze specific bounded situations. Normally, a case study focuses on a single real-life case or a small number of cases (Creswell, 2013). The case study approach seeks to explore a phenomenon within its context through close, in-depth evaluation of a variety of data sources (Baxter & Jack, 2008). The combination of the human experience and objective data is a hallmark of case study methodology and adds credibility to the data (Yin, 2009). Case study research aims to provide a deep understanding of real-world behavior and derive meaning from close examination of clearly defined case(s).

Despite an ongoing scholarly debate regarding the rigor and credibility of case study research, the approach has become increasingly popular in qualitative research. However, some

experts view a case study as only an initial step in determining a topic of study, not an inclusive research methodology (Yin, 2012). Merriam (1988) pointed out that the term case study is often used as a catchall for qualitative research and that the precise meaning and elements of case study research are not fully understood. Lack of understanding may affect the credibility of the case study approach among scholars and experienced researchers. Morse (2011) asserted that case studies published without sufficient explanation of the study design make it difficult for readers to grasp the decisions made in developing the methodology. The absence of this rationale may affect how readers interpret the quality, credibility, and rigor of case study research (Hyett, Kenny, & Dickson-Swift, 2014; Sandelowski, 2000). Yin (2003) claimed that lack of clearly defined case study design and methods has propagated a stereotype that case study research is weak, imprecise, and void of rigor. Its limitations have led some researchers to question whether the case study approach is even a methodology or a research method (Thomas, 2010).

Robert Stake and Robert Yin are seminal scholars who significantly influenced case study methodology during the 20th and 21st centuries. Both strove to ensure case studies would thoroughly examine a research topic and reveal its substance (Baxter & Jack, 2008). Both Yin (2009) and Stake (1995) claimed that multiple sources of data are critical in developing a reliable and credible case study. However, the paradigms used as the basis for their variants of case study research are divergent. Yin's research is positivist and Stake's is constructivist (Boblin, Ireland, Kirkpatrick, & Robertson, 2013). According to Boblin et al. (2013), "the philosophical assumptions used in guiding their research are different" (p. 1267). Yin (2009) utilized propositions as a blueprint for research design and development. Conversely, Stake (1995) employed political, social, and historical issues to guide the research process.

Another key difference between Yin's and Stake's approaches is how they categorized case studies. Yin (2009) classified case studies as *explanatory*, *exploratory*, or *descriptive*. Stake (1995) differentiated case studies as *intrinsic, instrumental,* or *collective*. Understanding these terms is important because they affect study design, data collection, and data analysis. These variations can influence research steps and findings. Because Yin's and Stake's case study designs and methodologies are both widely used, defining the similarities and differences between their methodologies helps researchers determine whether or not a case study approach is appropriate for their research topics. Table 1 shows how Yin's and Stake's case study approaches vary and where they intersect (Baxter & Jack, 2008, pp. 547-548; Creswell, 2013; Stake, 1995).

Table 1

Description of Yin's and Stake's Case Study Categories

Type of Case Study and Researcher	Description
Explanatory – Yin	Used to explain complex real-world issues and programs
Exploratory – Yin	Used to explore situations that have no clear outcomes
Descriptive – Yin	Used to describe a real-life intervention or phenomenon
Multiple Case Studies – Yin	Used to compare and study differences within and between cases
Intrinsic – Stake	Used to study a case of intrinsic or unusual interest
Instrumental – Stake	Used to analyze and study a specific issue, not a specific case
Collective – Stake	Used to examine several cases – similar to multiple case studies

Participants

This case study examined the influence of school district consolidation on per-pupil expenditures and student performance in the Waterbury-Duxbury School District. Stakeholders and school and community leaders who were present when the Waterbury-Duxbury School District was formed were interviewed to get their perspectives regarding the consolidation process and the effect of school district consolidation on school costs and student achievement. These individuals were likely to have a deeper understanding of the reasons for the district consolidation than the average citizen. Therefore, their answers were more likely to be based on some level of investigation and involvement. This added credibility and substance to their responses and to the study. Interview results were compared with objective data to see whether perceptions matched archived performance and budget information. Both sets of data were necessary to show how opinions and perceptions of school district consolidation compared to reality. Case study findings may either reinforce or change attitudes toward rural school district consolidation.

Purposeful sampling was employed (Creswell, 2013). This sampling strategy supported making logical connections within information categories/types, between interviews, and across school consolidation efforts that have taken place in Vermont and the United States. School district consolidation is a relatively unusual phenomenon in Vermont. To understand the relationship between perspectives on school district consolidation and its real effects, individuals who understood the school budget process, were vested in the system, and comprehended some of the financial challenges facing small Vermont school districts were interviewed. Therefore, community leaders and stakeholders who were actively involved in the Waterbury-Duxbury School District consolidation effort and who had a solid understanding of school district

consolidation process were interviewed. This added weight to the research and value to the findings. The converse would have been to select random community members and compare their views to the objective data. The complexity of school district consolidation would have made random selection challenging and limited the reliability and benefits of the research findings. Purposeful sampling allowed the researcher to select people who could assist in understanding the effects of rural school district consolidation and provide useful information for communities investigating consolidation options (Creswell, 2013).

Creswell (2013) claimed that four to five participants should be used in case study research. Therefore, a teacher, parent, school administrator, school board member, and town administrator were interviewed. This provided balance in the interview process through recruiting individuals who complemented the interview sampling approach. In addition, five participants offered opportunities to effectively identify cross-interview themes (Creswell, 2013).

Recruitment and Access

Recruitment of participants was not a problem because the researcher lived in the Waterbury-Duxbury School District and worked in the system as a teacher and assistant principal. Thus, there was likely a pre-existing level of trust with the participants. Anonymity was enhanced by the number of school and community leaders available to interview and the number of years since the school system was consolidated. The researcher's knowledge of the school system and its consolidation team allowed him to recruit participants and avoid ethical issues. The researcher used personal contacts in the Waterbury and Duxbury communities to locate and communicate with participants. Because no confidential information was requested and all the data that was collected and examined was public, no letters of permission were required for this study. However, the researcher did contact the superintendent who served

Waterbury and Duxbury to get permission to contact a former parent, teacher, and school administrator.

Managing and confronting biases is an important element of high quality, valid, and ethical research. Therefore, this researcher utilized reflective memos throughout the study (Maxwell, 1996). This practice allowed the researcher to separate personal views from those of the participants. Furthermore, the researcher had no supervisory or authoritative influence over the participants. This promoted a relaxed interview process as well as honest perspectives on school district consolidation. Eliminating power and biases from the study added value and authenticity to it.

Protection of Human Subjects

Obtaining reliable and credible data is a primary goal in a doctoral thesis project. Confidentiality is vital in research that utilizes interviews and surveys (Creswell, 2013). To ensure confidentiality, the researcher used pseudonyms such as "school administrator" and "school board member" so no individual person could be identified, had participants select the time and site of the interviews, and eliminated or redacted any personally identifiable details from the transcripts and thesis. In addition, written consent was obtained from all participants and the transcripts were shared with them to ensure accuracy. Any information that participants felt was identifiable or was not an accurate account of their responses was deleted from the transcripts and not used a part of this thesis.

Data Collection

Quantitative Data. The primary research question aimed to determine the effect school district consolidation had per-pupil expenses and student performance before and after consolidation. Therefore, preconsolidation budget expenditures (e.g., facilities, instructional

resources, salaries, insurance, and transportation) and per-pupil costs were compared to postconsolidation data. In determining average per-pupil costs, the total budget was divided by the estimated number of students enrolled in each fiscal year. This allowed the researcher to examine the influence consolidation had on school district expenses and per-pupil expenditures. In addition, in order to determine how school district consolidation affected student performance, the researcher compared achievement on state-level assessments in mathematics and literacy for 4^{th} and 8^{th} graders before consolidation to the results for the same grades after consolidation.

The underlying assumption of this case study was that school districts produce education outcomes (student performance) through inputs (expenditures), i.e., resources, services, and personnel that cost money. Analysis of school expenses and student outcomes on state assessments helped identify differences in cost and student performance before and after the Waterbury-Duxbury School District merger. Moreover, they illuminated the effect that size had on school expenses and student performance.

Qualitative Data. For this case study, a teacher, school administrator, school board member, parent, and town administrator who experienced and were a part of the Waterbury-Duxbury School District consolidation were interviewed. The interviews were semistructured and lasted approximately 60 minutes. Participants chose the time, location, and method for the interview (e.g., phone, in person, or virtual). In order to enhance the validity of identified themes, interviews followed a protocol with consistent questions presented at each interview (see Appendix A).

To understand the relationship between perspectives on school district consolidation and its actual effects, individuals who had knowledge of the Waterbury-Duxbury School District consolidation, were vested in the school system, and comprehended some of the financial

challenges facing small Vermont school districts were interviewed. This added credibility to the research and value to the findings. Moreover, interviewing stakeholders who were part of the consolidation and influenced by it increased authenticity and trust in the case study. The converse would have been to select random community members and compare their views to the objective data. The complexity of school district consolidation would have made random selection challenging and limited the reliability and benefits of research findings.

There are active opponents of Act 46 and school district consolidation who want to stop it immediately. Opinions and anecdotal comments regarding savings and student outcomes are circulating around the state. Recently, the nonprofit group Vermonters for Schools and Communities appealed to school board members and individuals running for office to suspend Act 46. A case study that evaluated school costs and student performance on a local, micro scale was important to Vermont residents. The results and findings of this research project may support communities and policy makers in staying the course or modifying, delaying, or abandoning Act 46.

Data Storage

To ensure confidentiality, pseudonyms were used for interview participants and all identifiable information (e.g., position, years of service, and accomplishments) were omitted from the final report. Recordings were stored on the researcher's personal computer and backed up on a separate hard drive. No one had access to the researcher's password or the hard drive. After the research project was completed, the computer recordings located on the personal computer and hard drive were deleted. As previously mentioned, the researcher had no authoritative or evaluative leverage over any of the individuals selected for the interviews.

Data Analysis

Budget and student performance data. The following steps were used in analyzing the quantitative data for this case study:

1. Collected archived preconsolidation and postconsolidation budget and state-level student assessment data (e.g., New Standards Reference Exam, Math Skills and Reading Understanding) for Grades 4 and 8.
2. Analyzed budget and student assessment data in Grades 4 and 8 before and after school district consolidation.
3. Compared performance and per-pupil expenditures before and after consolidation.
4. Determined whether there was a difference in per-pupil expenditures (total school district costs divided by total number of students) and student performance results on state-level assessments in Grades 4 and 8 before and after consolidation. Analyzed budget expenditures and student achievement results of the Waterbury-Duxbury School District before and after consolidation.

Interviews. The following steps were employed in analyzing the qualitative data for this case study:

1. Conducted and recorded five interviews with a parent, school board member, teacher, school administrator, and town administrator via an iPhone 6 voice memo application.
2. Transcribed the interviews through Rev.com.
3. Asked participants to review their transcripts and affirm or clarify responses to questions.
4. Read transcripts multiple times.

5. Utilized analytical and reflective memoing in coding interview statements (Saldaña, 2009).
6. The first cycle of coding involved holistic coding (Saldaña, 2009). According to Saldaña (2009), holistic coding allows inexperienced researchers to analyze data as a whole and identify broad themes and categories prior to more detailed coding.
7. The second cycle of coding included focused coding (Saldaña, 2009). Focused coding complements the first cycle of coding because it supports the researcher in distilling the broad categories established through holistic coding into primary categories. Saldaña (2009) found focused coding to be appropriate for virtually all qualitative research and useful in developing major categories and themes from data.
8. Used hand coding techniques and charts to store, categorize, and sort codes and to identify similarities, differences, and themes. Through inductive analysis, patterns were established and raw data condensed and summarized in order to establish clear connections between the research objectives and the findings derived from the raw data (Creswell, 2002). A goal was to identify consistent themes within the interview data that could be used to establish the research findings. Inductive analysis provided an efficient way of analyzing the qualitative data in the case study.
9. Evaluated interview themes and objective data to determine whether perceptions of school district consolidation aligned with results. This information was used to demonstrate how opinions and perspectives of school district consolidation were related or unrelated to the actual effects. As Vermont and other states consider the implications of school district consolidation, this information may help communities

make informed decisions and add to the limited number of school district consolidation case studies available for interested parties to examine.

Trustworthiness

To gather and secure reliable and accurate data from interviewing, it is essential that participants trust the researcher (Creswell, 2013; Stake, 1995). In order to garner trust, the researcher was clear about his experience with school district consolidation, the purpose of the study, how the findings would be used, and how the data would be evaluated. Furthermore, the researcher shared with participants that financial and student performance data would be compared with their responses to see how perceptions compared to actual results. In addition, the researcher communicated coding methods, cross validation plans, methodology (case study), positionality, and some information derived from the reviewed literature. Offering details regarding the researcher's interest, objectives, and process allowed participants to feel comfortable providing honest perspectives and answers to interview prompts.

Limitations

The size and geography of Vermont's school districts vary greatly. Additionally, each town and school has unique characteristics, needs, and financial realities. Therefore, the fiscal and student results experienced in the Waterbury-Duxbury School District may not transfer or materialize in other communities and school districts that merge. The purpose of the case study was not to make causal or relational connections. The goal of the study was to provide Vermonters with a real-life example of the influence school district consolidation had on school expenditures and student achievement in a small rural school community and to demonstrate how opinions and personal views on school district consolidation compared with factual data.

The findings and information supplied in this case study may not resonate with all Vermonters and school leaders, but it has the potential to enhance the conversation and debate.

Chapter 4: Findings and Analysis

Vermont's recent school reform statute, Act 46, requires school districts to study and consider merging with other school districts to form a pre-K-12 school system that has a minimum of 900 students, optimizes efficiencies and resources, elevates equity, and expands opportunities for students. This controversial law has polarized some communities and evoked passionate debate across the state. Opinions, innuendos, and broad-brush claims are evident in news reports and periodicals across Vermont. No case study of a Vermont school district that has consolidated is available to refute or confirm viewpoints on consolidation. A case study of this nature has not been produced in the state due to the very limited number of school district mergers that occurred from 1915-2015 (Cate, 2006). Comparing real budget and student performance data before and after consolidation may provide valuable evidence to communities and policy makers about the possible effects of school district consolidation and allow interested parties to see how opinions align with objective results. In order to provide this information, the following research question guided this case study: How do preconsolidation and postconsolidation expenditures and student performance results compare to teacher, parent, and school and community leaders' experiences and perceptions in the Waterbury-Duxbury School District? Information and results that answer this question may add more objectivity to the issue and move the conversation in a data-driven direction.

This is a qualitative case study in which a parent, teacher, school leader, town administrator, and school board member who were part of the Waterbury-Duxbury School District consolidation were interviewed. All participants experienced and were involved in the Waterbury-Duxbury School District merger. Interview questions were constructed to elicit personal perspectives and opinions about the influence the Waterbury-Duxbury School District

consolidation had on student performance and education expenditures. Interview results were coded to identify themes across interviews. Objective budget and student performance outcomes on statewide assessments before and after consolidation were compared with interview themes to identify similarities and differences. Chapter 4 focuses on the study's results. This includes findings that emerged from interviews as well as the student performance and budget data gleaned from public documents. A critical objective of this study was to determine how stakeholders' perceptions of school district consolidation compared to actual financial and student performance results. In addition, the study strove to offer research findings that may help Vermonters better understand some of the myths and realities around school district consolidation.

Student Performance Analysis Before and After Consolidation

Act 60, approved in 1997 by the Vermont Legislature, required the state and all school districts to establish methods of assessment that demonstrated attainment of standards and report those student performance results to their communities at least annually (Act 60, 1997). This was the impetus for implementation of statewide mathematics and language arts testing in Grades 4, 8, and 10. From 1997-2003, Vermont utilized the New Standards Reference Exam (NSRE) as its statewide assessment for mathematics and language arts in Grades 4, 8, and 10. Prior to 1997, the Waterbury School District, Duxbury School District, and school districts across Vermont used a variety of assessment methods to evaluate and track student achievement. Thus, there was no common assessment to examine before consolidation. However, preconsolidation NSRE Grade 4 mathematics and reading data for the Waterbury School District and 8th grade NSRE results in reading for Harwood Union were found (Harwood Union School District, 1997, Town of Waterbury, 1997). In 1996, Waterbury and Duxbury 8th graders attended

the Harwood Union School District and were part of the 1996 NSRE student cohort. However, students from four other towns were also enrolled in the 8th grade in Harwood Union School District. The scores were not disaggregated by town of residence. Therefore, there is no way to determine specifically how Waterbury and Duxbury students achieved on the 1996 assessment. Tables 2-4 provide preconsolidation data in math skills and reading understanding in Grade 4 on the New Standards Reference Exam (NSRE) for the Waterbury School District and reading understanding at Harwood Union in Grade 8.

Table 2

Student Performance Preconsolidation Grade 4 Math Skills % Achieved Standard on NSRE Waterbury School District

Year	Waterbury % achieve standard math skills	Duxbury % achieve standard math skills	Vermont % achieve standard math skills
1996	39%	Not available	51%

Note. Data taken from Town of Waterbury (1997).

Table 3

Student Performance Preconsolidation Grade 4 Reading Understanding % Achieved Standard on NSRE Waterbury School District

Year	Waterbury % achieve standard reading understanding	Duxbury % achieve standard reading understanding	Vermont % achieve standard reading understanding
1996	64%	Not available	59%

Note. Data taken from Town of Waterbury (1997).

Table 4

Student Performance Preconsolidation Grade 8 Reading Understanding % Achieved Standard on NSRE Harwood Union School District

Year	Harwood Union % achieve	Vermont % achieve standard reading

	standard reading understanding	understanding
1996	85%	73%

Note. Data taken from Harwood-Union School District (1997)

Preconsolidation statewide assessment data for Waterbury and Duxbury students in Grades 4 and 8 are limited prior to Act 60. School districts across the state utilized diverse assessments such as portfolios, the Stanford Achievement Test, and the California Achievement Test. Waterbury and Duxbury reported different assessment results to their communities in 1995 and 1996 (Town of Duxbury, 1996, 1997; Town of Waterbury, 1996, 1997). Tables 5-8 provide common and consistent statewide assessment results after consolidation for Waterbury-Duxbury School District students in Grades 4 and 8.

Table 5

Student Performance Postconsolidation Grade 4 Reading Understanding % Achieved Standard on NSRE Waterbury School District

Year	Waterbury-Duxbury	Statewide average
1997	80%	Not available
1998	96%	86%
1999	90%	83%
2000	86%	79%

Note. Data taken from Waterbury-Duxbury School District (1998, 1999, 2000, 2001).

Table 6

Student Performance Postconsolidation Grade 4 Math Skills % Achieved Standard on NSRE Waterbury School District

Year	Waterbury-Duxbury	Statewide average
1997	57%	Not available
1998	71%	67%
1999	77%	69%
2000	72%	69%

Note. Data taken from Waterbury-Duxbury School District (1998, 1999, 2000, 2001).

Table 7

Student Performance Postconsolidation Grade 8 Reading Understanding % Achieved Standard on NSRE Waterbury School District

Year	Waterbury-Duxbury	Statewide average
1997	64%	Not available
1998	71%	62%
1999	63%	67%
2000	52%	62%

Note. Data taken from Waterbury-Duxbury School District (1998, 1999, 2000, 2001).

Table 8

Student Performance Postconsolidation Grade 8 Math Skills % Achieved Standard on NSRE Waterbury School District

Year	Waterbury-Duxbury	Statewide average
1997	52%	Not available
1998	58%	67%
1999	59%	66%
2000	66%	64%

Note. Data taken from Waterbury-Duxbury School District (1998, 1999, 2000, 2001).

Pre and Post Consolidation Budget Data

Tables 9 and 10 and Figure 5 present per-pupil costs before and after the Waterbury-Duxbury School District merger.

Table 9

Per-Pupil Spending Preconsolidation

Year	Waterbury	Duxbury
1993	$4,486	$7,085
1994	$4,752	$6,649
1995	$5,367	$6,597
1996	$5,396	$6,910

Note. Data taken from Town of Waterbury (1993, 1994, 1995, 1996) and Town of Duxbury (1993, 1994, 1995, 1996).

Table 10

Per-Pupil Spending Postconsolidation

Year	Waterbury-Duxbury
1997	$5,586
1998	$5,874
1999	$6,265
2000	$6,899

Note. Data taken from Waterbury-Duxbury School District (1997, 1998, 1999, 2000).

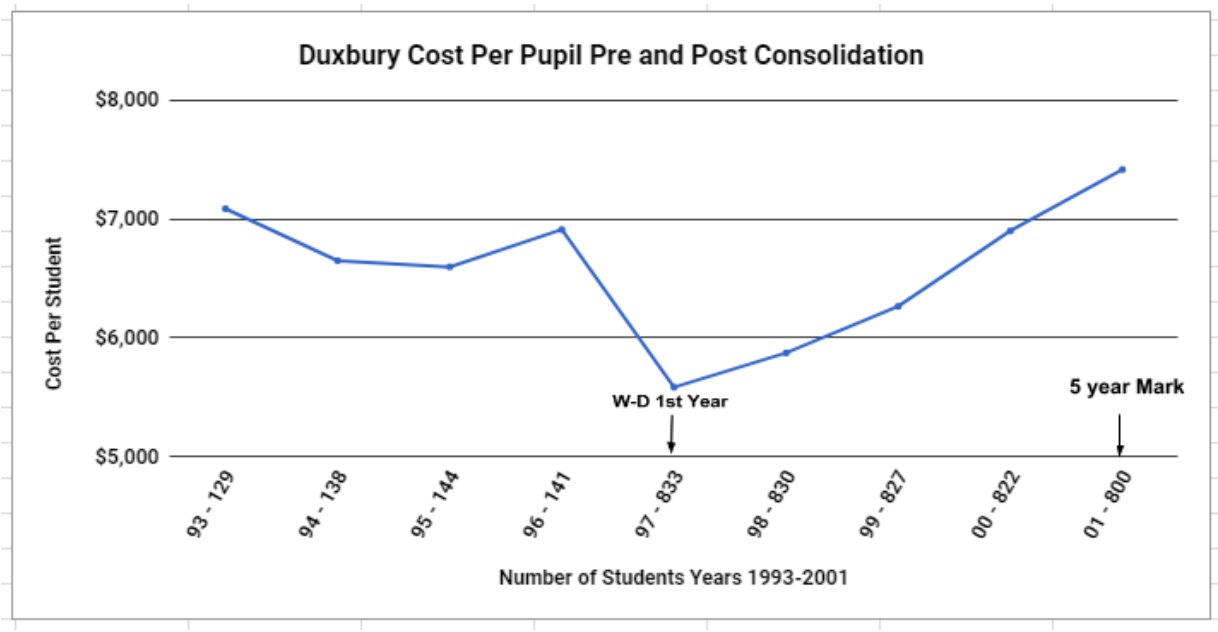

Figure 5. Duxbury cost per pupil before and after consolidation. Source.

Interview Participant Profiles

Teacher. The teacher interviewed for this study had recently retired after over 20 years in the profession. She taught science at the high school and middle school levels and also had some experience in an alternative education setting. She was in her late 50s, White, and lived in the town of Waterbury. She was college educated with a bachelors and masters degree. In addition to being part of the first Waterbury-Duxbury School District teaching corps, her two children were part of the consolidation transition. Thus, her perspective was unique in that she was both a parent and a teacher in the Waterbury-Duxbury School District.

School administrator. The school administrator who participated in the interview process was in his mid 60s, White, and a resident of central Vermont. His professional experience included middle and high school teaching and elementary and middle level public school administration. The school administrator had also recently retired after over 40 years in pre-K-12 education. He had earned a bachelor's degree and master's degree from the University of Vermont. He was a school administrator in Duxbury before consolidation and in the Waterbury-Duxbury School District after consolidation.

Town administrator. The town administrator who participated in the research study was in his late 50s, White, and college educated. He had over 30 years of experience as a town administrator in Vermont and was a Waterbury resident. He was a town administrator in Waterbury before and after the school district merger and continued to serve as a town administrator in the area. Like the teacher, his two children were enrolled in school during the school district consolidation. Therefore, his answers reflected his experiences as a town administrator who was involved in the school district merger and also as a parent of two children who were enrolled in school before and after consolidation.

School board member. The school board member interviewed for this case study was in her early 60s, White and college educated. She was a life-long Waterbury resident who was educated K-12 in the Waterbury school system. She served for over 15 years on school boards before and after consolidation. Moreover, she was on the original Waterbury-Duxbury School Board and was an advocate for the school district consolidation initiative. She had extensive knowledge and intimate experience in the steps and process that led to the successful school district consolidation vote as well as the transition to a new school entity.

Parent. The parent participant was White, in his early 60s, and college educated in the United States. He was a local business person who had lived in the town of Waterbury for over 25 years. His two children were enrolled in schools that merged to form the Waterbury-Duxbury School District. His family moved to the Waterbury area while the school district consolidation was being studied and considered.

Interview Themes

Unsure about student performance, but clear on opportunities. It was difficult for the interview participants to articulate their perspective on how the school district merger affected student achievement. Several participants paused and took a moment before attempting to answer the question. Four of the five participants offered conflicting opinions on the merger's effect on student performance. Three of them shared that they had not really looked at the school district merger from a performance perspective, but more from a monetary vantage point. One participant stated, "It is about the money, that's ultimately what it's about."

Currently, communities and the state are attempting to reduce or slow the increase in pre-K-12 spending and elevate student achievement. The Waterbury-Duxbury School District merger was driven by the same financial pressures and equity issues that resulted in the passage of Act 46 in 2015. Before consolidation, Duxbury's school building was in disrepair and a significant amount of money was needed to get the building up to state standards. The school administrator interviewed claimed, "Duxbury's situation was dire. The Agency of Education came in and said, 'We're closing your building.' They could not have existed the way they were going. Something needed to be done." Waterbury was sending its 7th and 8th graders to a 7-12 school district (Harwood) and spending significantly more per pupil for these students as compared to pre-K-6 students attending Waterbury Elementary (Town of Waterbury, 1996).

These elements were cited by the school board member and municipal administrator as reasons for the consolidation.

All of the participants felt that the consolidation resulted in increased opportunities for students. This was identified as a subtheme. One participant shared:

> The kids at Duxbury never had a chance to do any sports, any activities, anything. Computers, if there was a computer in every class, we were lucky. Do the comparison at Crossett Brook. We built the lab. We put computers in each room. We had professional development for teachers.

The teacher (also a Waterbury resident and parent) shared:

> I feel like it was a very positive change. I don't know that the test scores are going to be drastically higher at all, but I would guess that they're about on par, about the same. I think that it was a very good move for this community.

There were few connections documented in the interviews between better facilities, coordinated professional development, expanded technology opportunities, after-school and co-curricular activities, robust library services, instructional coaches, and elevated performance on statewide assessments. Four of the five participants clearly asserted that the merger was good for students and community members, but were not sure whether the merger correlated with better performance on statewide assessments.

No consensus on per pupil spending before and after consolidation. Interview responses to the question "Do you think the Waterbury-Duxbury consolidation increased or decreased per-pupil expenditures?" were mixed. There was no consensus or majority response for this question. The teacher and school administrator were unsure whether the school district consolidation increased or decreased per pupil expenditures. The school administrator shared

that it really depended on one's point of view. He talked about Duxbury needing a new building and Waterbury some renovations. He added that the 50 percent in state construction aid to renovate Thatcher Brook Primary School and build Crossett Brook Middle made a difference, but he could not affirm whether it decreased per-pupil expenditures when making year over year comparisons. The teacher stated:

> I don't know if it increased or decreased per-pupil expenses. I think the facilities that we built at the Crossett Brook Middle School were fabulous in which case there might have been a higher cost per pupil because we had a new structure. I really don't know.

Both the teacher and school administrator talked about the upgrade in facilities, technology, and student services. They claimed these factors may have added expenses, but enhanced the educational experience for students.

The school board member was clear that the merger saved money. She shared, "Unequivocally, a decrease ... we saved money over what would have been spent." There is evidence to support this statement. Based on archived reports, the per-pupil cost to send 7th and 8th graders to Harwood Union was over $8,000 per pupil in 1996 (Town of Duxbury, 1996; Town of Waterbury, 1996). This was significantly above the pre-K-6 per-pupil costs for Waterbury and Duxbury before consolidation. The school board member cited this as factor in her answer. She added that the Waterbury-Duxbury School District was in a better position to control costs over time while providing students with a high quality education. Moreover, the school board member brought up the point that when the Waterbury and Duxbury School Districts were dissolved the local union representing these school districts also ceased to exist. This resulted in all teachers and support staff being laid off and required to apply for positions in the Waterbury-Duxbury School District. Additionally, there was no union contract in place

during the first year that Waterbury-Duxbury was in full operation. This allowed the school board to construct contractual terms without participating in a collective bargaining process. The school administrator and teacher felt this may have had an influence on costs.

The municipal administrator had an interesting perspective. He believed that the merger likely did not reduce overall per-pupil spending, but that the merger did control costs over time. He stated:

> I don't know as if I could ever say that expenses went down, but my recollection thinking back was that we were able to bend the curve down and increases over time were more manageable than they might have otherwise been.

Cost over time is outside the scope of this study, but it is important to note that the municipal administrator and school board member believed the Waterbury-Duxbury School District did a better job of managing costs in the long term. The municipal administrator added:

> I think that more important to me than the absolute cost was, in my estimation, the value that we were getting for what we were spending was greatly improved. I think it was a big improvement for the entire Waterbury-Duxbury community.

This was a common theme that emerged in the interviews. Participants believed the merger expanded opportunities for students and that this was a positive outcome from the consolidation.

The parent felt the merger did not save money and likely increased costs due to the debt that was incurred to build Crossett Brook Middle School and renovate Thatcher Brook Primary School. He shared, "I would make the assumption that costs increased and my reason for saying that is servicing the loan for the construction." Moreover, he believed that administrative costs increased due to assembling a new staff. He asserted, "You're starting a new school, so with a new school, you're putting into place a completely new staff and so you're funding a second level

of administration that you did not previously have." However, like all the participants, the parent felt there was an expansion of opportunities for students after the merger and that this was a positive result of the merger that added value to the school community.

Summary of Findings

Assessment results before and after consolidation. There is no way to statistically ascertain the influence the Waterbury- Duxbury School District merger had on statewide assessment results due to the lack of consistent and representative data before 1997. Thus, participants' uncertainty about the merger's impact on statewide assessment results is consistent with the data available and the mixed results between 4th and 8th grade. There is no concrete evidence that can be used to confidently assert whether performance improved or declined. However, the data in Tables 5 and 7 indicates that the percentage of Waterbury-Duxbury students who achieved the standard in reading understanding and math skills in Grades 4 and 8 increased from 1997 to 1998. In addition, data presented in the student performance tables indicates that the 1997 Waterbury-Duxbury 4th grade students outperformed the 1996 Waterbury School District 4th graders on the NSRE reading understanding and math skills assessments. Archived data also indicates that Waterbury-Duxbury 4th graders had a higher achievement rate in 1997-2000 than the state average in both reading understanding and math skills. Moreover, in 1998 Waterbury-Duxbury performed higher than the statewide average in reading understanding in Grades 4 and 8. Conversely, 1996 preconsolidation assessment data indicates that Harwood Union 8th graders outperformed the NSRE statewide average in reading understanding, with 85% of students achieving the standard (Harwood Union School District, 1998). Postconsolidation results reveal that only 64% of Waterbury-Duxbury students achieved the standard in reading understanding on the NSRE in 1997. Yet, to reiterate, 8th grade Waterbury and Duxbury

students who attended Harwood Union in 1996 were not disaggregated. Thus, there is no valid way to compare 1996 Waterbury and Duxbury students to 8th graders enrolled in the Waterbury-Duxbury School District in 1997.

The data presented in this study do not demonstrate trends or empirical evidence regarding student performance on statewide assessment before and after consolidation, but the data do make it difficult or even impossible to assert that the school district merger negatively influenced statewide student assessment results. Furthermore, it is important to remember that all interview participants believed the school district merger increased opportunities for students, which is also a goal of Act 46 (2015).

Per-pupil spending before and after consolidation. How does actual per-pupil spending before and after the merger compare to participant perspectives? As stated by the school administrator, "It depends on your point of view." For Duxbury, there was definitely a reduction in pre-K-8 per pupil spending after the merger. In the first year of the merger, Duxbury realized a savings of approximately $1,300.00 per pupil, which equated to a 19% reduction in per-pupil expenditures. This is substantial. Duxbury's consolidation with a bigger district provided economies of size and scale that were absent before consolidation. Duxbury went from a school district of approximately 100 students to a merged system with over 800 students. Figure 5 illustrates the sharp drop in per-pupil spending during the first year the Waterbury-Duxbury School District was in full operation as well as the gradual increase five years out. Duncombe and Yinger's (2007) school district research in New York matched Duxbury's experience. Additional factors that impacted per-pupil spending after consolidation were the elimination of the need to send 7th and 8th graders to Harwood Union and the absence of an organized union at the inception of the Waterbury-Duxbury School District.

Waterbury's results were different. This community experienced a 3.5% or $190.00 increase in its cost per pupil in the first year of the merger. The percentage increase closely aligned with the consumer inflation rate at the time, and included an increase for the construction bond and a 10 percent increase in health insurance rates (Waterbury-Duxbury School District, 1997). The overall pre-K-8 cost per pupil did go up for Waterbury. However, significant budget pressures were managed, the town had a new state-of-the-art middle school and a renovated elementary school, budget increases were similar to the inflation rate, and per-pupil costs for 7th and 8th grades were reduced by nearly 30% (Town of Waterbury, 1996). Again, it depends on your perspective.

Based on the data, the school board member's assertion that it saved money was partially correct. In addition, it is plausible that Waterbury and Duxbury spent less than they would have over time without the merger. The parent and municipal manager were also partially correct as there was a reduction in per-pupil expenses in Duxbury, but an increase in Waterbury. The teacher's uncertainty about costs appears logical and appropriate when considering differences in cost per pupil between the two communities. The school administrator claimed that the answer depends on your perspective, experience, town of residence, and point of view. The objective cost per pupil results appear to align with his assertion.

Skeptical about statewide consolidation savings. An additional subtheme was identified during the interviews regarding school district consolidation and cost savings. Specifically, all of the participants were skeptical that Act 46 and statewide school district consolidation efforts would save money. However, all participants hoped that there would be some economies of scale and better and more equal opportunities for students. The parent talked about Vermont's low teacher to student ratio being a cost driver that needed to be managed more

effectively. He shared, "I don't see consolidation decreasing the number of teachers to a significant extent." The school board member expressed skepticism because of the divisiveness across the state regarding forced consolidation, Vermont's independent mindset, and a reluctance to change. She wondered whether administration and school board members would have the courage to make difficult and sometimes unpopular decisions regarding staffing and programs. The following statement from the teacher sums up the general sentiments of the participants regarding statewide school district consolidation and Act 46: "Forcing people is always a problem because you're always going to get people who dig their heels in. Although, sometimes it needs to be done. I don't really understand where the savings comes from."

Conclusion

Both opponents and proponents of school district consolidation can find support for their position in the findings of this case study. The absence of a statewide common assessment before 1997 makes it impossible to declare whether student performance went up or down. Therefore, the student performance data is inconclusive. However, there is some evidence to suggest there were areas of growth and basis for a claim that the consolidation was at worst neutral on student performance. The per-pupil expenditures also posed some interpretation challenges as the overall results were mixed. Waterbury's per-pupil costs went up while Duxbury's were significantly reduced. The interview themes follow from the mixed financial data and the limited performance information. School district consolidation is complex. The qualitative and quantitative outcomes of this case study back this assertion. There are few consistent and definitive measures that demonstrate whether the Waterbury-Duxbury School District consolidation had a positive or negative influence on student performance on statewide assessments. In addition, the per-pupil expenditures before and after consolidation were not

uniform. The ambiguities of the findings are in line with much of the scholarly literature on school district consolidation. Therefore, it is vital for communities considering consolidation and policy makers legislating changes to recognize and understand the factors that make consolidation complicated and unique from town to town and district to district.

Chapter 5: Conclusions and Recommendations

School district consolidation is an important issue in Vermont. Laws requiring communities and school districts to study the concept and consider merging with neighboring districts are in full force across the state. School systems that do not consolidate are required to submit a proposal to the Vermont State Board of Education that demonstrates how they will meet the objectives of Act 46. Districts are grappling with this process as well as with community members who are vehemently against changing the educational governance structure. In July 2017, more than 100 Vermont towns were considering alternative governance structure proposals or had voted to reject school district consolidation under Act 46 (Vermont School Boards Association, 2017). The issue became so disruptive that a school board group emerged, the Alliance of Vermont School Board Members. This group feels underrepresented on public policy issues such as school district consolidation. In a press release, the group wrote, "Once again, community school boards are simply being made into a whipping boy for a deeply irresponsible process dedicated to damaging the local governance of Vermont public schools" (Bryar, 2017, p. 1). The time is right to share a case study of a school district that has experienced consolidation. Towns, communities, school districts, and policymakers may be able to use these results to better understand how personal perceptions compare to real budget and student performance data. This Waterbury-Duxbury case study addressed the following central research question: How do preconsolidation and postconsolidation expenditures and student performance results compare to teacher, parent, and school and community leaders' experiences and perceptions in the Waterbury-Duxbury School District?

The intent of this study was to compare individual opinions and views of the Waterbury-Duxbury School District consolidation to real preconsolidation and postconsolidation budget and

student performance data in order to see whether perceptions matched reality. The divisive nature of this issue has resulted in elevated rhetoric and broad claims about the benefits and drawbacks of school district consolidation. Thus, this case study comparing objective information with personal viewpoints may be useful to Vermonters. An additional goal of this research was to provide a snapshot of the possible effects of school district consolidation in rural Vermont on school expenses and student achievement. Many Vermont school districts are in the process of self-evaluating, having regional discussions, and considering proposals to retain their current governance structure, work with other districts to form a different governance structure, or enter into another type of joint model. These proposals must demonstrate how the governance structure would support the district's ability to meet or exceed the five goals of Act 46 (2015). School districts that will not meet the preferable size and structure outlined in Act 46 by July 1, 2019, must submit an alternative proposal to the Vermont State Board of Education (Act 46, 2015). No Vermont case study that compares actual budget and student performance data before and after consolidation has been located. Therefore, the themes, lessons, and qualitative and quantitative data included in this study may provide school districts considering consolidation with useful information to support their decision-making process. One of the participants shared, "This is an important project to pursue and I hope it helps Vermont make decisions in the future." In addition, policymakers may be able to use the findings to advance school district consolidation efforts and/or make changes to existing school district consolidation statutes.

Themes and Major Takeaways

Table 11

Significant Themes and Takeaways from Interviews

Major themes and subthemes	Highlights

Unsure about student performance	• Difficult for participants to answer • Not a key element of the consolidation • Limited data available • No before and after consolidation comparison shared with stakeholders • Focus was on improving facilities, saving money and controlling costs
No consensus or majority on costs before and after consolidation	• No union after consolidation may have influenced pay and benefits • Bond to update building and construct new building may have increased costs • High cost to transport 7th and 8th grade students to Harwood Union • May not have saved money, but controlled costs over time
Increased opportunities for students after consolidation (subtheme)	• Co-curricular opportunities expanded • Technology resources increased • Creation of science labs • Library resources enhanced • On-site food service • Healthier learning environment • Modern/tech ready facilities • Handicapped accessible • Safe learning environment
Statewide savings from school district consolidation (subtheme)	• Skeptical where savings will come from • Divisive topic • Need for more research • Cost of education in Vermont high • Question: Will school close?

Application of Findings

Student performance. All participants had a difficult time sharing their perspective on the influence of school district consolidation on student performance. There may be good

reasons for the ambivalence and uncertainty regarding student performance on statewide assessments before and after consolidation. Prior to the 1997-1998 school year (the first year that the Waterbury-Duxbury School District was in full operation), there was little uniformity in statewide assessments and reporting of results. In fact, Act 60, approved in 1997 by the Vermont Legislature, required the state and school districts to establish methods of assessment that demonstrated attainment of standards and report student performance results to the community at least annually (Act 60, 1997). This was the impetus for the implementation of statewide mathematics and language arts testing in Grades 4, 8, and 10.

Despite the extent of consolidation in the United States over the past several decades, there is little rigorous research that examines the effects of school district consolidation on student performance (McGee, 2011). Andrews et al. (2002) found that most studies on school district consolidation focused on budget expenditures, not student performance. Scholarly journals and school district consolidation research indicate a lack of clarity and definitive data about student performance outcomes before and after consolidation (Andrews et al., 2002; Duncombe & Yinger, 2007; Fox, 1981). The lack of peer-reviewed findings may be another factor that influenced participants' uncertainty regarding consolidation's effect on student achievement. This study is significant because it provides a real-life example of how limited information affects understanding, perceptions, and positions on important issues.

The dearth of empirical student performance data before and after consolidation, participants' indistinct understanding of the effect of the Waterbury-Duxbury merger on statewide assessment results, and the limited number of comparable performance indicators for Waterbury-Duxbury demonstrate the need for additional research and more consistent analysis.

The student performance data that was used in this case study is not statistically reliable or valid because there was no common preconsolidation state assessment available. In addition, Duxbury's Grade 4 sample size was too small to yield any conclusive findings. Moreover, before consolidation, Duxbury's and Waterbury's 7th and 8th graders attended a school district that included four other towns. Assessment results for that district were not disaggregated by town of residence. Therefore, communities considering school district should not use the data to draw any conclusion about the influence of the Waterbury-Duxbury consolidation on student outcomes. However, communities can examine the postconsolidation results and compare these with state outcomes. This information may be useful in evaluating Waterbury-Duxbury postconsolidation performance in relation to statewide outcomes. These results were mixed, so it may be difficult to take an unambiguous position.

Budget expenditures before and after consolidation. Duxbury experienced a noteworthy decline in spending per pupil, while Waterbury saw an increase of approximately 3.5 percent following the merger. Duxbury's decline in budget expenditures was consistent with some of the research cited in the literature review. In addition, it provides objective evidence that small school districts can achieve economies of scale by merging with larger school districts. These findings are important because Vermont has a large number of small rural school districts (Act 46, 2015).

Waterbury's per-pupil spending did not decline after consolidation. However, based on interview responses from the school board member and the town administrator, this was not shared as a goal or possible outcome with Waterbury stakeholders during the community engagement process. A primary objective of the consolidation in Waterbury was to control costs. School leaders stated that the new Waterbury-Duxbury School District budget would not

increase more than 5 percent (Waterbury-Duxbury School District, 2000). This target was met in the first few years after consolidation, as per-pupil increases did not exceed 3.5 percent and these increases were similar to the inflation rate (Waterbury- Duxbury Annual Report, 1997, 1998). This information and evidence is meaningful because financial and educational realities and priorities can vary from district to district. Therefore, an overall reduction in school expenditures may be important and relevant to one community, but not to another. The Waterbury-Duxbury case study offers an example of how the financial impact can differ for communities that decide to consolidate. Policymakers and districts currently examining school district consolidation opportunities may find this discovery valuable.

Responses to the interview question about per-pupil expenditures increasing or decreasing after consolidation were varied. The actual budget results were mixed as well. Thus, the interview responses and perspectives align with the results. This directly addresses the central research question. The interview responses support the supposition that informed constituents can effectively and accurately evaluate consolidation outcomes. This conclusion is backed by empiricism theory, which was one of the theoretical frameworks utilized in this case study. All of the participants had involvement and real experiences with the Waterbury-Duxbury School District consolidation. This provided them with enough information to articulate answers that corresponded with actual budget outcomes rather than offering a guess or uninformed opinion. This is a key finding of this case study because few Vermonters have experience with school district consolidation. Therefore, there are not many Vermonters who can share personal experiences that support their position on how school district consolidation can affect school costs.

Student opportunities after consolidation. Even under the best circumstances and conditions, school district consolidation can be a passionate and emotional issue. Vermonters value their small, quaint, local schools. This was evident in the interviews. The school board member described with affection her K-12 experience in the Waterbury school system. In addition, the school administrator shared how the community of Duxbury came together and pitched in with labor and materials to complete some necessary renovations to the school when money was tight. The school administrator also told a story about a community member who showed up at the Duxbury Elementary School prior to the consolidation transition and asked, "I want to know what you're doing to honor the school? A lot of us in town went to that school, and we believed in that school." These sentiments represent the care and warmth Vermont community members have for their local schools. This is significant in relation to the uniform perspective among participants that the consolidation increased opportunities and equity. All participants agreed that this had been good for children in both towns. For communities examining school district consolidation, this subtheme offers the perspectives of real people who were involved in and experienced the consolidation from different positions. Communities looking to expand opportunities and elevate equity through school district consolidation may consider this finding informative and useful.

Theoretical Frameworks: Production Theory and Empiricism Theory

Two theoretical frameworks were utilized in this research: production theory and empiricism theory. Both were essential for collecting and analyzing the qualitative and quantitative data as well as for answering the central research question. Production theory was employed to examine budget (inputs) and student performance (outputs). It provided a system and structure for comparing budget expenditures and student performance results in order to

determine if there were differences in outcomes before and after consolidation. Production theory was fundamental in assessing the actual budget and student achievement results before and after consolidation. Data collected under this framework was compared to teacher, parent, town administrator, school administrator, and school board member perceptions in order to determine the alignment between perceptions and reality. The process of evaluating expenses and results identified some statistical issues with the student assessment results but also economies of scale after consolidation. Production theory supported evaluating the possible influence of school district size on school expenses and student performance as well as providing information to compare with interview responses.

Empiricism theory was foundational for effectively examining and understanding the qualitative aspects and findings of this study. Specifically, empiricism theory reinforced the inference that well-informed community members can provide evidence-based perspectives if they have concrete and real experience. This was evident in the accuracy of interview perspectives regarding budget expenditures and student performance before and after consolidation. Empiricism theory relies on objective information and real-life experiences to evaluate assumptions and positions. The significance of this is clear as Vermont moves forward with school district consolidation legislation, discussions, analysis, and efforts.

Implications for Practice and Future Research

Statewide savings from school district consolidation. All of the participants shared their skepticism regarding savings from mass school district consolidation in Vermont. This may be the most important finding of this case study. Agency of Education representatives and policymakers should take note of this result because it may represent the viewpoint of many Vermonters. The absence of case studies in Vermont and the limited number of consolidations

over a 75 year period may have influenced participants' beliefs. Regardless, Vermont has an opportunity now to better inform the public about the effects of school district consolidation in rural areas. According to the Vermont School Boards Association (2017), there have been 22 full or partial school district mergers over the past year and a half. This provides the backdrop for future research. The school district consolidation process is evolving and in flux across Vermont. Twenty-seven towns have rejected consolidation articles and 59 towns are seeking exemptions under Act 46 (Vermont School Boards Association, 2017). Consolidation remains a hot-button and complex issue for many Vermonters. Therefore, state officials should consider increasing efforts to educate stakeholders about the effects of recent school district mergers. Accurate and transparent reports of consolidation outcomes may elevate community understanding and decrease some of the speculation around controlling or reducing Vermont's pre-K-12 education costs.

Economies of scale. Many small Vermont school districts are in the process of examining their consolidation options under Act 46. The findings of this case study offer real budget data showing that small school districts like Duxbury can reduce their per-pupil costs by consolidating with a larger system. In addition, optimizing school district efficiency is a key objective of Act 46 (2015). This is a major finding as Vermont strives to control education costs, decrease pressure on property taxes, and meet the goals laid out in Act 46. Moreover, this case study demonstrates that, under the right conditions, facilities can be built and created without increasing costs. This finding may be important for small school districts that have deferred maintenance on facilities and are facing safety and equity issues. It may also be important to policymakers as they search for ways to curb pre-K-12 education costs and establish greater economies of size and scale within the public school sector.

Unique opportunities. With a number of recent school district mergers, Vermont has a once in a hundred year opportunity to conduct authentic school district consolidation research and create a common metric to effectively compare student performance outcomes before and after consolidation. This work has the potential to educate communities in Vermont and across the United States that are examining school district consolidation. This case study reinforces the need for a consistent, longitudinal metric and demonstrates the limitations created by the absence of comparable student performance data. The possible merits and drawbacks of school district consolidation cannot be thoroughly evaluated without statistically reliable and comparable student assessment data. The inconclusive and inconsistent student performance information available and collected in the course of this case study emphasizes the need for policymakers to act now and establish a common method to measure student performance before and after consolidation. Community members cannot be expected to have well-informed positions when they have not been provided with results and reliable data.

Vermont has the chance to construct a common way of comparing student achievement before and after consolidation and informing local and statewide constituents. Realization of this opportunity could have a substantial impact on future school district consolidation research as well as on school district consolidation efforts taking place in Vermont and elsewhere in the United States.

In addition, recent school district mergers in Vermont present an opportunity to create a common statewide methodology to track education costs and per-pupil expenditures after consolidation. This opening has the potential to inform Vermonters and set the state as a leader in calculating and communicating how school district consolidation influences local and state budgets. Thus, the impact on future school district consolidation research may be extensive.

Connection to key legislation: Act 46. The participants' united perspective that the Waterbury-Duxbury School District consolidation added equity and opportunities for students connects to a primary goal of Act 46. That law states, "The legislation is designed to encourage and support local decisions and actions that: (1) provide substantial equity in the quality and variety of educational opportunities statewide" (Act 46, 2015, p. 3). This is the first of five goals outlined in the legislation. The interview responses offered in this case study indicate that the Waterbury-Duxbury School District merger achieved the first goal of Act 46. This may be notable to policymakers who are pursuing authentic examples of the potential merits of school district consolidation and are searching for the perspective of Vermonters who have experienced a school district merger. In addition, the conclusions of this research might be illuminating to communities seeking real-life input as they consider their options under Act 46 (2015) and Act 49 (2017).

Limitations

Prior to Act 60, Vermont did not track student performance in a common manner. Therefore, Waterbury and Duxbury utilized different measures and provided dissimilar student assessment information to communities before consolidation. In addition, Duxbury had too few students to make any statistical assertions. This was a notable limitation because there was no reliable or appropriate way to measure whether student performance on statewide assessments improved or declined after consolidation. However, there is some postconsolidation data that can be used to form a reasonable opinion regarding student outputs after consolidation.

This case study examined school district expenditures from two years prior to the school district consolidation through two years afterwards. It was not a longitudinal analysis of school district expenditures over an extended period of time. Thus, no empirical claims can be made

regarding the long-term effect on school budgets (inputs) in the Waterbury-Duxbury School District. Costs may have increased significantly after 1999. This was beyond the scope and outside the purpose of this study. The Waterbury-Duxbury School District case study demonstrates the need for future longitudinal research that controls for anomalies and diverse conditions across school districts and communities. This type of research will provide a scientific and fair evaluation of consolidation outcomes.

Conclusion and Recommendations

Vermont is in the middle of one of the most expansive and controversial school reform efforts in its history. The state has a chance to truly understand how school district consolidation influences education costs and student performance. Vermont has a rare opportunity that should not be missed or ignored. This case study highlights the need for additional school district consolidation research as well as the state's extraordinary and unique ability to provide authentic and relevant school district consolidation data to Vermont stakeholders and communities across the country. The following recommendations may support Vermont in capitalizing on the intent of recent legislation and recent school district mergers:

- Establish a statewide metric as soon as possible to evaluate whether or not consolidation is meeting the goals of Act 46.
- Track postconsolidation budget results with a common methodology so that fair and statistical comparisons can be made across Vermont.
- Create a common rubric to analyze and compare student performance results before and after consolidation. Report this data to stakeholders so they understand the return on their investment.

- Survey communities that have consolidated in order to identify gaps in understanding and gather their perspective on the advantages and disadvantages of changes to school district governance.
- Finally, conditions and realities can vary greatly from school district to school district and town to town. Therefore, it is vital that communities closely examine postconsolidation data to see whether the outcomes align with their preconsolidation goals.

Appendix A

School District Consolidation Case Study Interview Protocol

Introductory Statement: I want to thank you for taking the time to meet with me today. I'm a doctoral candidate at Northeastern University, and this interview is par**t o**f the case study research I am conducting on the Waterbury-Duxbury School District consolidation. Specifically, I am examining per-pupil expenditures and student performance data before and after consolidation to determine any effects. In addition, I am interviewing four school and community leaders to see whether their perceptions of the school district merger align with actual results. This may inform school district consolidation discussions and efforts taking place across Vermont.

Before we begin, I want share some details. All of the information that I will be assembling today is confidential and your name will be anonymous. There will be no identifiable information about you or your past or present role in the community. I will use pseudonyms for you and any community affiliation. I would like your permission to tape record the session, so that I can focus on our conversation. Are you OK with the details and process that I have shared? I want you to know that your participation is completely voluntary and if at any point during the interview you want to stop, you may do so. This interview is just a practice for me. But, if it was an official interview for my doctoral thesis, I would have you sign an informed consent document, stating that you understand and agree. Are you comfortable with this?

The Northeastern education doctoral program focuses on education change and how it influences student performance and communities. For today's interview, I have four questions that are geared to get your thoughts on how the Waterbury-Duxbury School District merger influenced expenses and student performance outcomes. Again, I have just four questions for

you. I expect the interview should take approximately 15 to 20 minutes. Do you have any questions? If not, are your ready for the first question?

Question 1: Do you think the Waterbury-Duxbury School District consolidation increased or decreased per-pupil expenditures? Please elaborate as much as you can on how you formulated your answer.

Question 2: What are the factors that you feel increased or decreased school district expenses after school district consolidation?

Question 3: Do you feel student outcomes on state assessments rose, declined or remained similar after school district consolidation?

Question 4: What are the factors that you feel that influenced student achievement on state assessments after school district consolidation?

Conclusions: I am finished with my questions at this point. Is there anything that we did not discuss that you think would be important to add at this time? Do you have any other questions for me? Next steps, I'll be preparing your transcript within the next three weeks. I can send you an electronic copy to review, edit, and validate. Then, we'll agree on how you'd like me to destroy the audio.

I thank you again for spending this time with me. Your participation in this interview has been very helpful in advancing my case study research of the Waterbury-Duxbury School District.

Appendix B

Unsigned Informed Consent

Northeastern University, Department of College of Professional Studies
Name of Investigator(s): Dr. Kelly Conn and John Alberghini
Title of Project: Vermont School District Consolidation Case Study

We would like to invite you to take part in a research project. The purpose of this research is to understand how preconsolidation and postconsolidation expenditures and student performance results compare to stakeholders' perceptions. With mandatory school district consolidation facing Vermont communities under recent legislation, a case study of a district that has consolidated has the potential to provide local planning and provide policymakers with evidence regarding the effect of school district consolidation on school expenditures and student results. By comparing real outcomes to personal viewpoints, communities can study how individual opinions about school district consolidation contrast with objective outcomes. You must be at least 18 years old to be in this research project.

The study/interview will take place via the phone, video conference, or at a location and time that is convenient for you. The interview will last approximately 40-60 minutes. If you decide to take part in this study, we will ask you some questions about the Waterbury-Duxbury School District consolidation.

There are no foreseeable risks or discomforts to you for taking part in this study.

There are no direct benefits to you for participating in the study**.** However, your answers may help communities in Vermont and other states that are examining and considering school district consolidation understand how personal perspectives compare to objective budget and student performance results.

Your part in this study is anonymous. That means no one will know whether you took part in this study and no one, including the researcher, will know your answers. Any reports or publications based on this research will use only group data and will not identify you or any individual as being part of this project.

The decision to participate in this research project is up to you. You do not have to participate and you can refuse to answer any question. Even if you begin the study, you may withdraw at any time. In addition, I will be sending you a copy of the interview transcript for your approval or edits.

You will not be paid for your participation in this study.

If you have any questions about this study, please feel free to call John Alberghini, the person mainly responsible for the research at alberghini.j@husky.neu.edu, 802-793-6231 (cell phone) or 802-434-2128 (work). You can also contact Dr. Kelly Conn, the Principal Investigator, at k.conn@northeastern.edu or 857-205-9585.

If you have any questions about your rights in this research, you may contact Nan C. Regina, Director, Human Subject Research Protection, Mail Stop: 560-177, 260 Huntington Avenue, Northeastern University, Boston, MA 02115. Tel: 617.373.4588, Email: n.regina@northeastern.edu. You may call anonymously if you wish.

You may keep this form for yourself.

Thank you.
John Alberghini

Appendix C

Email Recruitment Script

John Alberghini, Northeastern University Doctoral Candidate
Email Recruitment Script

Hello name of participant here, my name is John Alberghini. I am conducting a case study of the Waterbury-Duxbury School District as part of my doctoral thesis. The purpose of the case study is to understand how preconsolidation and postconsolidation expenditures and student performance results compare to stakeholders' perceptions. With mandatory school district consolidation facing many Vermont communities, a case study of a district that has consolidated has the potential to provide local planning and provide policymakers with evidence regarding the possible effect of school district consolidation on school expenditures and student results.

I believe you have knowledge about the Waterbury-Duxbury School District consolidation process, including some of the issues that came up when the consolidation was being discussed and the results of the vote. Would you be willing to participate in an in-person or phone interview with me? The interview consists of eight questions and should take approximately 40-60 minutes. The interview will be recorded and transcribed. I will share the transcription with you to ensure you are comfortable with your answers and to check for accuracy. All of the information I will be collecting is confidential and your name will be anonymous. There will be no identifiable information about you or your past or present role in the community. I will use pseudonyms for you and any community affiliations.

I will use the data collected in the case study to demonstrate similarities and differences between personal perceptions of school district consolidation and actual results. My hope is that the data and findings can be used by communities in Vermont and other states that are contemplating the possible benefits and challenges of school district consolidation.

Please know that you can withdraw from the study at any time.

Would you be interested in participating in the interview and setting up a time to conduct the interview?

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